

**Professional Guidelines: Assessing Iowa's Environmental
Educators and Naturalists**

**Plan B: Final Evaluation Project
Submitted to the Faculty of the University of Minnesota**

By Bobbi Donovan

**Advisor: Stephan Carlson
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Key Definitions

- National Association for Interpretation (NAI): This is a “professional organization dedicated to advancing the profession of heritage interpretation” (NAI, n.d.).

- North American Association for Environmental Education (NAAEE): This is a professional organization “dedicated to strengthening the field of environmental education and increasing the visibility and efficacy of the profession” (NAAEE, n.d.).

- Iowa Association of Naturalists (IAN): This a professional organization within Iowa. It “the development of skills and education within the art of interpreting the natural and cultural environments” (IAN, n.d.).

- Naturalist: This refers to county environmental educators/interpreters in Iowa.

- Next Generation Science Standards (NGSS): These are the national curriculum standards that guide public (k-12) science education.

Abstract

There is a well-established network of environmental educators and interpreters throughout the State of Iowa. The National Association for Interpretation (NAI), North American Association for Environmental Education (NAAEE) and the Iowa Association of Naturalist (IAN) are three of many professional organizations dedicated to supporting these professionals. Each has created a set of professional guidelines highlighting areas of competence. These include program development, program implementation, environmental literacy topics, and diversity, equity, and inclusion (DEI). Members of the Iowa Association of Naturalists (IAN) were sent an online survey to determine their knowledge, perception, and implementation of various guidelines and DEI practices. The results showed that the majority of respondents were aware that IAN had professional guidelines. However, fewer respondents were aware of NAI and NAAEE guidelines. Based on the data, many IAN educators are already incorporating various guidelines from each of the three professional organizations into their regular programming, including DEI practices, multiple teaching methods, and national science standards. Respondents also shared a variety of ways that their organization could become more inclusive and accessible to diverse audiences.

Keywords: environmental education, interpretation, professional guidelines, diversity, equity, inclusion

Introduction

Environmental interpretation and non-formal environmental education share many of the same goals, as both fields focus on the importance of educating people about natural resources and environmental conservation (Cable & Cadden, 2006). These fields differ slightly when it comes to a program's purpose and content though. Environmental educators strive to align their programs with an established school curriculum and various educational goals and objectives. Interpretation programs are educational, but they do not focus on specific school goals and objectives. Instead, the interpreter is free to "present whatever he or she wishes" and focuses on connecting people to the place they are visiting (Brochu & Merriman, 2008, p. 21).

Although there are some differences between environmental education and interpretation, it is still not surprising that professionals in both fields need to possess similar (often overlapping) abilities and competencies, especially when it comes to program development and implementation. In fact, professionals are often both interpreters and non-formal environmental educators.

National organizations, such as the Association for Interpretation (NAI) and North American Association for Environmental Education (NAAEE), that provide resources and support for interpreters and environmental educators. NAI's mission is to "inspir[e] leadership and excellence to advance heritage interpretation as a profession" (National Association for Interpretation [NAI], n.d.). Similarly, NAAEE focuses on "the power of education to advance environmental literacy and civic engagement to create a more equitable and sustainable future" (North American Association for Environmental Education [NAAEE], n.d.). Both organizations provide professional development opportunities, workshops, educational resources and relevant research to help advance the profession and support professionals in the field.

This study will focus predominantly on interpretation and environmental education professionals within Iowa but implications may be found elsewhere. There are 99 counties within Iowa and each of these countries has an established conservation board. A total of 85 of these county conservation boards employ at least one interpreter or environmental educator (they call them naturalists or environmental education coordinators). There are also a number of interpreters working for the state, zoos, museums, and other not-for-profit organizations within the state. The Iowa Association of Naturalists (IAN) was established in 1978 to help these professionals communicate, develop valuable skills, and continue learning about the profession (IAN, n.d.).

All three of these organizations, NAI, NAAEE, and IAN, have their own set of professional guidelines. This study examined the NAI, NAAEE, and IAN professional guidelines to determine how the three documents compared to each other. Understanding the similarities and differences between the guidelines helped to highlight gaps and areas of improvement within the IAN guidelines. For example, while there are many similarities between the national guidelines and Iowa's guidelines, one large difference is that NAI and NAAEE put a much greater emphasis on diversity, equity, and inclusion than IAN.

The goal of this study was to assess how environmental educators and interpreters within Iowa incorporate various NAI, NAAEE, and IAN guidelines into their professional work. These professional guidelines are valuable as they highlight the areas environmental educators and interpreters should strive to incorporate into their work (IAN, n.d., Carter and Simmons, 2010, National Association for Interpretation [NAI], n.d.). The goal of the guidelines is to encourage a high level of competency, professionalism, and quality throughout the field of environmental education and interpretation. Those working in the field have often needed to prove and justify why the profession is valuable and relevant to the needs of the nation (Carter and Simmons, 2010). The guidelines clearly state and define the ways environmental educators and interpreters can increase ecological literacy and environmental stewardship.

Study Relevance

Professional guidelines help to hold professionals to high standards, which is why it is essential that the guidelines are continually updated and improved to match the current needs of the profession (Carter and Simmons, 2010). While the field of environmental education and interpretation is much larger than one state, Iowa was the sole focus of the study. Since I am currently a naturalist in Iowa, I would like to see the profession grow and advance within the state. A review of the literature suggests that a study like this has not been done before, so the information gained should help IAN improve their professional guidelines. It will also allow Iowa professionals to better understand the work being done throughout the state and give them ideas on how to enhance their own programming.

One focus of the study is diversity, equity, and inclusion (DEI) practices and perceptions within environmental education and interpretation programming. For the purposes of this study diversity is examined in terms of race, ability, and sexual orientation. It is a timely subject due to current social movements (in 2021/2022) focusing on racial and LGBTQ rights both nationwide and within Iowa. The 2020 census showed that in Iowa “Black, Indigenous, Asian and Hispanic populations grew significantly in the state over the past decade” (Arena, 2021). Although specific numbers are not available, we infer there are also numerous individuals in Iowa that have disabilities and/or identify as a member of a sexual minority such as lesbian, gay, bisexual, transgender, queer, or asexual (LGBTQA+).

With Iowa’s demographics becoming more diverse, it is critical for environmental educators and interpreters in the state to have conversations about improving and implementing DEI practices. Research on spending time in nature has been shown to improve mental and physical health and should be available to all individuals (Gladwell et al., 2013). Including all individuals in the outdoors can also help promote environmental stewardship. For example, research has found that when people are able to gain meaningful outdoor connections, they are also more likely to express an interest in caring for the natural area in the future (Montero,

Roberts, Wilson, & Fonfa, 2018). For this reason, excluding groups of individuals can hurt conservation goals.

Despite these benefits, numerous research studies have shown that many individuals find the outdoors to be intimidating, unsafe, and/or exclusive (Anderson, 2014, Dorsch et al., 2016, Roberts & Henderson, 1997). Currently, the fields of environmental education and interpretation are still comprised of mostly white, cis-gender males (Moffatt & Cartmell, 2022). This uniformity makes it difficult for others to break into the profession or feel comfortable recreating outdoors. Caputo (2022) states that “upending homogeneity is not a sacrifice, it’s an outcome that makes our organizations relevant” (p.4). It is time for environmental educators and interpreters in Iowa to reflect on their DEI practices and figure out ways to move this profession forward.

Research Questions

1. What is the current awareness and perception of IAN, NAI, and NAAEE professional guidelines among Iowa environmental education and interpretation professionals?
2. To what extent are the IAN, NAI, and NAAEE professional guidelines relating specifically to program development and delivery being incorporated into programming by Iowa environmental education and interpretation professionals?
3. What practices, if any, are Iowa environmental education and interpretation professionals incorporating in their program development and delivery to promote diversity, equity, and inclusion?

Literature Review

Professional guidelines for Environmental Education and Interpretation

Environmental education and interpretation can be powerful tools for motivating people to protect natural resources and engage in environmental stewardship (Montero, Roberts, Wilson, & Fonfa, 2018). Professionals in both fields work to connect people to the natural world. As people start to feel closer to nature they begin to feel more empathy and attachment towards it (Franz & Mayer, 2014). This increased connection inspires individuals to partake in environmentally responsible behaviors. As Franz & Mayer (2014) argue, this connection and “we-ness” is one of the few psychological forces strong enough to compete with the prevailing counterforces required to engage in environmentally responsible behavior” (p. 86).

A major goal of environmental education and interpretation programming is to help both children and adults become more environmentally and ecologically literate (NAAEE, n.d.). Environmental literacy has many different definitions, but for the purposes of this study it refers to “a functional education that provides people with the knowledge, skills, and motives to cope with environmental needs and contribute to sustainable development” (Monroe & Krasny, 2016). This differs slightly from ecological literacy, which has been described as “an understanding of the complex interdependent relationships between human beings and their environment for the

purpose of maintaining sustainable ecosystems, which balance human needs, resources, and the natural world” (Monroe & Krasny, 2016, p.68).

The intention of environmental literacy is to give people environmental learning opportunities and knowledge (Monroe & Krasny, 2016). It is the hope that this knowledge and understanding encourage people to act in environmentally responsible ways. In contrast, ecological literacy narrows its focus specifically on helping people understand ecosystem functions, interconnectedness of socio-ecological systems and sustainable behavior. Qualities of ecological literate people include someone who “is comfortable outdoors”, demonstrates system thinking and environmental stewardship, and “has a well-developed sense of place” (Martin, 2008, Monroe & Krasny, 2016, p. 67).

Another major goal of environmental education and interpretation is increasing environmental stewardship. Environmental stewardship can be defined as “actions taken by individuals, groups or networks of actors, with various motivations and levels of capacity, to protect, care for or responsibly use the environment in pursuit of environmental and/or social outcomes in diverse social–ecological contexts” (Bennett et al., 2017, p. 597). Essentially this means that environmental educators and interpreters hope to inspire individuals and groups to take part in behaviors that will help protect and care for the environment.

The assumption is that those that have a better understanding of the natural world and ecological principles will be more aware of and concerned with environmental problems and environmentally responsible behaviors (Monroe & Krasny, 2016). This increased knowledge and awareness of nature encourages program participants to be better stewards of the environment (North American Association for Environmental Education, n.d.). However, for environmental education and interpretation to be effective, professionals need to develop and conduct high quality programming. NAAEE and NAI, argue that professional guidelines help provide direction on what a ‘good’ educator or interpreter entails. Professional guidelines set realistic expectations, achievable goals, and challenge professionals to maintain high standards (Mabel, 1991). These outcomes of professional guidelines help to guide and support both professionals within the organization and the entire profession.

History of NAAEE Guidelines

The guidelines set forth by NAAEE serve as a way to demonstrate that the field of environmental education (EE) is both relevant and important on a political level. EE has had an unstable and often unpleasant history in the United States (Carter and Simmons, 2010). It is not clear exactly when the term environmental education was coined or when the field began. However, Carter and Simmons suggest that “the concept of EE as practiced today may arguably be traced back to at least 1948” (2010, p. 5). In the 1960s and 1970s the field of environmental education had major successes and became more widely accepted throughout the United States. Political advancements and legislation helped promote conservation related behavior and supported professionals within the field. This all changed starting in the 1980s when the Reagan administration took office. Environmental literacy and conservation were no longer viewed as

important, so it is not surprising that the field of environmental education started to get questioned. These feelings unfortunately continued through the 1990s and early 2000s. During this time, environmental education was described “as incomplete at best or biased at worst” and politicians frequently attacked the field (Carter and Simmons, 2010, p. 9).

These negative views pushed national organizations to focus on improving so that they could prove the worth of environmental education (Carter and Simmons, 2010). One important step was creating professional guidelines. The hope was that these guidelines would promote high quality environmental education across the nation by highlighting important features that all educators and programs should possess. Ideally, these guidelines would also provide consistency to the field because at the time they were created (1990s), “the implementation of environmental education nationwide [was] inconsistent at best” (Simmons, 1995). NAAEE’s resulting guidelines clearly laid out what students and educators should understand.

Another large political concern of the 1980s was student academic achievement (Carter and Simmons, 2010). *A Nation at Risk* was published in the early 1980s by the National Commission on Excellence in Education (United States National Commission on Excellence in Education, 1983). This publication essentially explained that the USA was falling behind globally in academics. This led to the creation of national educational standards and specific academic goals. NAAEE’s professional guidelines point out exactly how environmental education fits into school curriculum and emphasizes national standards, especially science related fields (Simmons, 1995). By showing that environmental education plays a large role in student success and academic achievement, NAAEE hoped to prove that the field played a critical and relevant role in the United States.

History of NAI Guidelines

People acted as interpreters long before interpretation became a profession. Stories about the environment, traditions, culture, and science have helped people pass important information from one generation to the next (Brochu & Merriman, 2008). The modern profession of interpretation was shaped by important figures, such as Enos Mills, Freeman Tilden, and John Muir, over 100 years ago. Similar to the environmental education field, this profession has also faced challenges throughout its history. As mentioned previously, the Reagan administration rolled back much of the environmental progress that had been made prior to this administration taking office in the 1980s (Hejny, 2018). With this leadership in place, people unfortunately began to question the need for environmental protection and education. Other federal administrations that followed have also been known for lacking environmental concern and rolling back environmental policies.

NAI was established in 1988 (by two other interpretation organizations merging) and has been supporting professionals within the field since. In 2007, the NAI Board of Directors decided the profession needed a set of “universally accepted standards” that documented the “preferred practices for interpretive organizations” (NAI, n.d.). Eventually, NAI decided that these original standards needed updates and revisions. The process of updating the standard

began in 2016 with the creation of the Interpretive Standards Committee (ISC) (NAI, n.d.). This committee first sought to answer the question “What does a good interpreter need to know and do?” (NAI, n.d.). Then the ISC conducted interviews and focus groups to learn what NAI members and interpretation professionals thought a good interpreter exemplified. These steps lead to the creation of a new set of professional standards. NAI explains they plan “to use these standards with subject matter experts across the profession to update and modify [their] certification program” (NAI, n.d.).

Iowa Association of Naturalists

IAN brings together environmental educators and interpreters from various workplaces across Iowa, including zoos, museums, state agencies, county conservation boards, and private nature centers. The organization was established in 1977, but the first official IAN meeting was not until 1978 (IAN, n.d.). Since this time, IAN has sought to support professional environmental educators and interpreters by holding workshops, developing educational resources, and fostering communication between members. IAN created its professional guidelines with the goal of “making natural interpretation in Iowa better and more professional” (IAN, n.d.). These guidelines were amended and updated in 2010 to better serve professionals within Iowa.

Organizational Guidelines

The guidelines and standards set forth by NAAEE, NAI and IAN are intended to help provide focus within the field and set achievable goals. NAAEE’s Guidelines for Excellence are broken into many separate components. Their Nonformal Environmental Education Programs: Guidelines for Excellence are of specific interest. The goal of these guidelines is to “offer a way of judging the relative merit of different programs, a standard to aim for in developing new programs, and a set of ideas about what a well-rounded nonformal environmental education program might be like” (NAAEE, 2009, p.1). NAI’s Interpretation Standards: A Pathway to Excellence is also divided into multiple sections. Their programming guidelines focus on the “knowledge, skills and abilities that pertain to a wide range of interpreters” (NAI, n.d., p.3). IAN’s Professional Standards for an Interpretative Naturalists clearly outlines the knowledge, skills, and characteristics that Iowa interpreters and environmental educators should possess.

Diversity

The guidelines start to differ substantially when it comes to incorporating diversity, equity, and inclusion (DEI) being incorporated into programming. Both NAAEE and NAI discuss the importance of DEI measures, while IAN’s guidelines do not mention DEI. Diversity can be defined as “all aspects of human difference, social identities, and social group differences, including but not limited to race, ethnicity, creed, color, sex, gender, gender identity, sexual identity, socio-economic status, language, culture, national origin, religion/spirituality, age, (dis)ability, military/veteran status, political perspective, and associational preferences”

(University of Iowa, 2019, p.1). As stated in the introduction, this project will focus specifically on diversity in terms of race, gender, and disability status.

For the purposes of this study, inclusion refers to ensuring “all members are and feel respected, have a sense of belonging, and are able to participate and achieve their potential” regardless of their diversity status (University of Iowa, 2019, p.1). In this study equity refers to helping all participants thrive by having “fair and just practices and policies” in place (University of Iowa, 2019, p.1). For equity to truly happen, inequalities between different groups of individuals need to be acknowledged and attended to (University of Iowa, 2019).

Both inclusion and equity are crucial to environmental education and interpretation programming because professionals within the field have the potential to work with and educate diverse audiences. When attending programs all individuals should feel welcome and safe and be treated fairly. This allows each participant to fully immerse themselves in the educational opportunity, so that they can focus on learning, exploring, and connecting with the program content.

Unfortunately, many groups are underrepresented when it comes to their involvement in the outdoors or environmental programming (Moffatt & Cartmell, 2022). A non-exhaustive list includes, those with disabilities, ethnic and racial minority groups, and LGBTQ+ peoples (Dorsch et al., 2016, Health, 2022, Schwartz & Corkery, 2011).

Those with disabilities report numerous reasons for not participating in outdoor activities or environmental programming. These reasons vary depending on the disability or disabilities of an individual. Park infrastructure is a large concern for those with physical disabilities (Burns & Graefe, 2007). Uneven trails, steep boat accesses, muddy fishing spots, long walks to get to a designated area, etc. often make the area and program activities inaccessible to these individuals. Intellectual disability is a disability that causes restrictions to cognitive functioning and life skills (Special Olympics, n.d.). Individuals with intellectual disabilities may have challenges learning, communicating, participating in social activities, and completing daily tasks. They may also experience physical limitations or have a physical disability in addition to their intellectual disability. Many ID individuals in one study reported they lacked self-esteem and confidence in their ability to successfully participate in outdoor recreation (Dorsch et al., 2016). Others added that societal views and opinions from people without disabilities prevented them from trying and participating in new outdoor experiences.

Racially and ethnically diverse individuals have also shared numerous reasons that discourage them from participating in outdoor activities or attending outdoor programming. Individuals have explained that they often feel discriminated against when recreating in the outdoors, which makes them feel unsafe and/or uncomfortable (Roberts & Henderson, 1997). These individuals have also reported that they find it difficult to participate in outdoor experiences because of financial and transportation constraints (Roberts & Drodgin, 1993). Others note that not having role models that look like them and lacking knowledge about outdoors opportunities prevents them from participating in outdoor activities (Roberts & Henderson, 1997).

Similarly, some individuals that identify as LGBTQA+ (lesbian, gay, bisexual, transgender, queer/questioning, asexual) have also found outdoor programs and spaces can feel unwelcoming. One individual explains that for them “seemingly little things– gender-neutral bathrooms, mindful educators and organizations promoting belonging – make a big difference” (DeWeese, 2018). For others, having programs geared specifically towards the LGBTQA+ community helps individuals feel more accepted and comfortable (DeWeese, 2018).

Although there are many reasons why diverse individuals do not participate in outdoor activities, studies have found there are steps that can be taken to promote inclusion in the outdoors (Dorsch et al., 2016, DeWeese, 2018). These include, but are not limited to, adhering to ADA guidelines, asking diverse individuals to lead programs, and developing programming geared towards the needs of a specific group (Burns & Graefe, 2007, Roberts & Henderson, 1997, DeWeese, 2018). All individuals should be able to experience and benefit from quality time outdoors, which is why professional guidelines should outline ways to provide inclusive and equitable experiences for all individuals.

Methods

To answer the key questions, the researcher developed and distributed a questionnaire to the IAN network in order to determine the knowledge, perception, and implementation of various professional guidelines among EE and interpretation professionals. A survey was chosen for this project because it allowed for a variety of data to be collected quickly and easily from a wide range of respondents. This section outlines the sampling frame, questionnaire design, and analysis method.

Study Context

The state of Iowa is broken into a total of 99 counties. Each county has an established county conservation board that aims to protect and preserve natural resources within their respective county. The amount of land owned, number of facilities, number of employees, and type of natural resources managed by the conservation board varies by county. While not every county conservation board employs a full-time environmental educational/interpreter, a total of 88 counties do have this position. The primary responsibility of these environmental educators and interpreters is to provide educational opportunities and teach about natural resources within their respective county. Since there is a large network of environmental educators and interpreters within Iowa, the Iowa Association of Naturalists (IAN) professional organization was established to help connect and support professionals.

Sampling Frame

The sampling frame was determined based on the IAN membership list. This membership list consists of both current and past environmental educators and interpreters mostly within Iowa. Environmental interpreters and educators working for museums, private nature centers or state-run organizations are welcomed to join. College and high school students working towards a career in environmental education and interpretation are also encouraged to become members. There are a handful of members that do not work in Iowa, however none of these members completed the questionnaire. Although not all Iowa environmental educators and

interpreters are a part of this group, a majority of current professionals are. At the time this study was completed, IAN had 181 members. All IAN members were contacted via an email listserv, which serves as IAN's primary communication method.

Many environmental educators and interpreters in Iowa are county naturalists. Since these naturalists make up the majority of the IAN organization, county naturalists that are not members of IAN were also invited to participate in this study via email. A list of emails were obtained by visiting the county's respective websites. This helped add responses and insight that would have been missed otherwise.

Questionnaire Design & Distribution

The questionnaire was intended for Iowa environmental educators and interpretive professionals and IAN members.

The questionnaire was created using Qualtrics, a survey design software. There were 49 questions on the questionnaire, which were a mix between multiple choice and free response questions (see Appendix A). However, multiple skip sequences were used so many participants did not see or respond to every question. The median time it took respondents was about 20 minutes to complete the questionnaire.

The questions on the questionnaire instrument were developed specifically for this study and are based on the NAI, NAAEE, and IAN guidelines. The guidelines were compared against each other to see if there were any similarities and differences between the documents (see Appendix B). Based on the comparison between the three guidelines, five important themes emerged. Questions were organized in six distinct sections based on these themes: a.) General Professional Guideline, b.) Environmental Literacy, c.) Program Development, d.) Diversity, Equity, and Inclusion, e.) Program Implementation, and f.) Demographics. Questions were developed and added to the instrument to assess how Iowa's professionals implement guidelines in each of these areas. The comparison between the three guidelines also showed that there were gaps in the IAN professional guidelines. Based on this information, questions were developed and added to determine if recommendations should be made to include new guidelines to fill these gaps.

The researcher conducted a pilot study of the questionnaire in February 2022. Participants were 7 individuals who were either Minnesota environmental education/interpretation professionals or students in the Natural Resource Science and Management program at the University of Minnesota-Twin Cities; both graduate and undergraduate students participated. Based on the results and recommendations from the pilot, the wording of the questionnaire instrument was revised.

The questionnaire was distributed using an online survey link that was emailed to all 181 IAN members using the IAN email listserv. All IAN members have access to the listserv, and it serves as IAN's primary communication method. Additionally, a week after the questionnaire was sent out on the IAN listserv, 101 individualized emails were sent to each county naturalist in Iowa. Many of those that received personalized emails were members of IAN, so the individualized emails largely served as a participation reminder.

A final reminder with a link to the online questionnaire was sent via the IAN listserv two weeks after the first IAN listserv email was sent. In total, the questionnaire was open for three and a half weeks beginning and ending in March 2022.

Research Design

The questionnaire was administered one time, as it sought to capture the current practices and perceptions of Iowa's environmental educators and interpretation professionals. This study was meant to understand the degree to which the guidelines set by NAI, NAAEE, and IAN are currently being utilized by these professionals. It also revealed what is currently being done within Iowa to promote diversity, equity, and inclusion in environmental programming. Based on this 'snapshot' of what is happening, recommendations on how to update and improve the IAN guidelines were made.

Although the field of environmental education and interpretation is much larger, the population of interest was determined to be Iowa professionals. Having a narrower focus and concentrating on the efforts of educators and interpreters in one area, allowed for specific recommendations to be made. Since the recommendations were created and geared to IAN specifically, the hope is that they will be useful, constructive, and relevant to the organization. Therefore, helping environmental education and interpretation grow and improve throughout the state.

Analysis Process

Since there was a mixture of free response and multiple-choice questions, data analysis happened in two parts. For the free response section, the responses for each of the questions were reviewed individually and inductively coded based on major themes that emerged.

The data were organized based on the number of years the respondents were employed in the field (i.e., Less than 1, 1-5, 6-10, 11-15, and 16+). The frequency of the previously identified themes were tallied and recorded for each of the 5 categories (years employed in the field). This allowed for comparison between the perceptions and thoughts of those that had been employed in the field for different lengths of time. The results of the qualitative responses are detailed in the results section below.

For the multiple-choice questions, SPSS was used to analyze the data. Descriptive statistics including mean, frequency, and SD were calculated for each of the multiple-choice questions. For each of the program implementation and development, DEI, and training multiple choice questions chi-square tests were run to determine correlation between the two categorical variables. The results from these tests are detailed in the following results section.

Results

Survey results revealed that respondents had various knowledge and perceptions about the different aspects of IAN, NAI, and NAAEE's professional standards. Respondents also implemented the standards in different ways. The following sections explain the results from the five survey sections.

Participant Demographics

A total of 111 surveys were collected in Qualtrics. After the data cleansing process, 99 surveys were completed enough to be included in the data analysis procedures, resulting in a usable response rate of 89%. Usability was determined based on having complete more than 50% of the multiple-choice questions.

Out of 99 respondents, 97 respondents were currently working in the environmental education or interpretation field in Iowa. The 3 respondents that were not currently working in the field were students interested in the environment education/interpretation profession.

A total of 88 disclosed their racial identity, with 94% (n=83) of respondents indicating they identified as white. Two individuals identified as 'other' (2%) but did not disclose their racial identity. Three others identified indicated they preferred not to answer.

Eighty-nine individuals responded to the gender identity question. Sixty-six respondents identified as female (74%), while 23 respondents identified as male (26%).

Out of the 89 participants that responded, all but 3 reported that they were currently a member of IAN (96%). Fewer respondents reported being members of NAI (37%, n=82) and NAAEE (9%, n=77).

1. What is the current awareness and perception of IAN, NAI, and NAAEE professional guidelines among Iowa environmental education and interpretation professionals?

Professional Guidelines

Respondents were asked to share their thoughts on the importance of professional guidelines for six different statements. A total of 99 individuals responded to each of these questions.

The majority of the respondents (86.9%) responded that professional guidelines were very important or important for developing educational programs, implementing educational programs, and promoting inclusive environments for diverse audiences. Only 2% of the respondents thought that professional guidelines were not at all important for these areas. Similarly, the majority of respondents (85.9%) also reported that professional guidelines were very important or important for stating professional responsibilities. Fewer respondents (73.7%) thought that professional guidelines were very important or important for stating skills naturalists should possess for practice.

Table 1 summarizes the mean and standard deviation for each of the six statements. Four points on a scale were used to rate the importance level of each statement. A value of 1 represents very important, while a value of 4 represents not at all important.

Table 1*Summary of the Mean and Standard Deviation for Importance of Professional Guidelines*

	Stating Skills	Developing Educational Programs	Stating Professional Responsibilities	Implementing Educational Programs	Promoting Inclusive Environments
N	99	99	99	99	99
Mean	2.02	1.74	1.75	1.63	1.71
Standard Deviation	0.845	0.737	0.719	0.764	0.746

The majority of the 99 respondents (~80%, 79 participants) reported that they were aware that IAN had a set of professional standards (see Figure 1).. Of these 79 participants, 75.9% had referenced the standards. However, most had either not read the standards (44%) or only read them once (30.5%) in the past 12 months. Only 8.5% of the respondents had referenced them at least once a month. About 68% of the respondents (n=59) found the IAN standards valuable to their professional work.

Most of the 99 respondents (~69%) were aware that NAI had a set of professional standards (see Figure 1). Only the 67 respondents that reported being aware of the standards saw the following question about the frequency of reading the standards. About 39% (n=67) had read the standards. However, in the past 12 months most had either never read the standards (40%) or only read them once (36%). About 68% of the respondents (n=25) found the NAI standards valuable to their professional work. Only those that reported reading the standards saw the question about value.

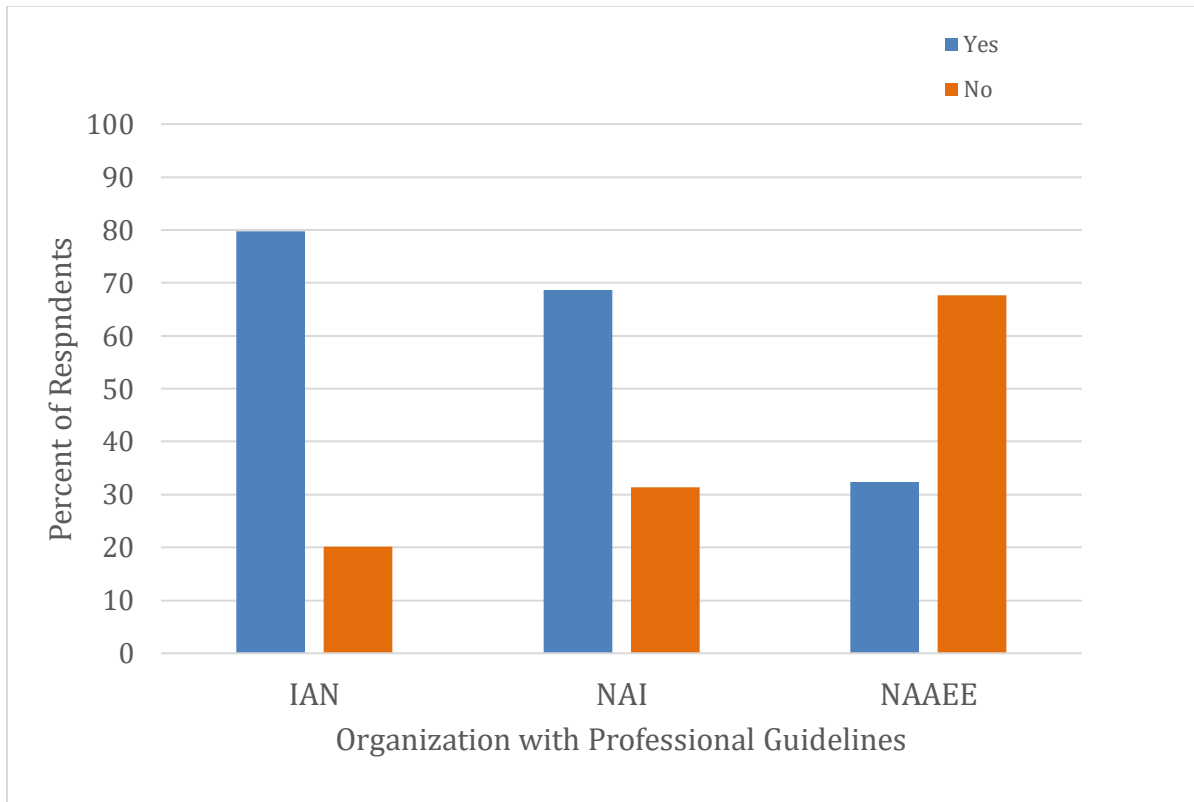
In contrast to IAN and NAI, many of the 99 respondents (~32%) were not aware that NAAEE had a set of professional standards (see Figure 1). Only 31 respondents were aware of the NAAEE standards and therefore saw the next question. Out of these 31 participants, about 26% had read the standards. However, in the past 12 months most had either never read the standards (74.2%). Only 8 individuals responded to the question about whether the guidelines were valuable to their work. All 8 individuals reported that NAAEE's guidelines were valuable to their professional work.

Chi-squared tests for independence were run in SPSS to compare the relationship between the number of years respondents had worked in the field and their awareness of each of the organization's professional standards. The analysis suggests a significant relationship between the number of years respondents had worked in the field and their awareness of the IAN professional guidelines, $X^2(4, n=96) = 14.085, p=0.007$. The more time a person was employed

in the field the more awareness they had of the IAN standards. Cramer’s V was calculated (0.383) and it revealed that there was a moderate association between time employed in the field and awareness of IAN’s guidelines.

Figure 1

Percent of Respondents Aware of Organizational Professional Guidelines.



Note. This bar chart displays the percentage of respondents who were aware and unaware of IAN, NAI, and NAAEE professional guidelines.

Chi-squared tests were also run to explore the relationship between number of years in the field and whether respondents had read the IAN standards. Only those that said that they were aware of the IAN standards were asked if they had ever read them. There was a significant relationship between the variables, $X^2(4, n=76), p=0.034$. The longer respondents were employed in the field the more likely they were to have read the standards. The Cramer’s V was determined to be 0.309, which shows a moderate association between the variables.

A second a chi-square test was run to determine the relationship between the years employed in the field and how frequently respondents referenced the standards. Only those that said they had read the standards were asked to answer how frequently they read the standards. There was not a significant relationship between years employed and the frequency respondents read the standards.

A third chi-square test was run to determine the relationship between the years employed in the field and how valuable the standards were to the respondents. Again, there was not a significant relationship between the variables.

2. To what extent are the IAN, NAI, and NAAEE professional guidelines relating specifically to program development and delivery being incorporated into programming by Iowa environmental education and interpretation professionals?

Program Development & Implementation

Results displayed that respondents were mixed when it came to the frequency in which they wrote out goals for their programs. Some participants shared that they wrote goals for every program (19.8%) or almost every program (13.5%). Almost as frequently, respondents shared that they wrote goals for half of their programs (20.8%) or less than half of their program (20.8%). The greatest percentage (25%) of respondents shared that they never or almost never wrote out goals for their programs.

There were also mixed results for the frequency in which respondents wrote out theme statements in preparation for their programs. Some respondents shared that they wrote theme statements for every program (21.1%) or almost every program (14.7%). Other respondents shared that they wrote theme statements for half of their programs (16.8%) or less than half of their programs (16.8%). Again, the greatest percentage of respondents (30%) shared that they never or almost never wrote out theme statements.

Multiple chi-square tests were run for both the frequencies that respondents wrote out goals and theme statements. No correlation between the frequency of writing either the goals or theme statements and number of years in the field or gender of the respondent was found.

Respondents were also asked to share information about the schools they provide programming for. All of the respondents said they provide some type of programming for elementary schools (K-6) grade. The large majority of participants shared that they provide programming for preschool (98.9%) and junior high school (96.8%). Data showed that many respondents provide programming for high schools (88%), while fewer respondents provide programming for college/universities (60.2%).

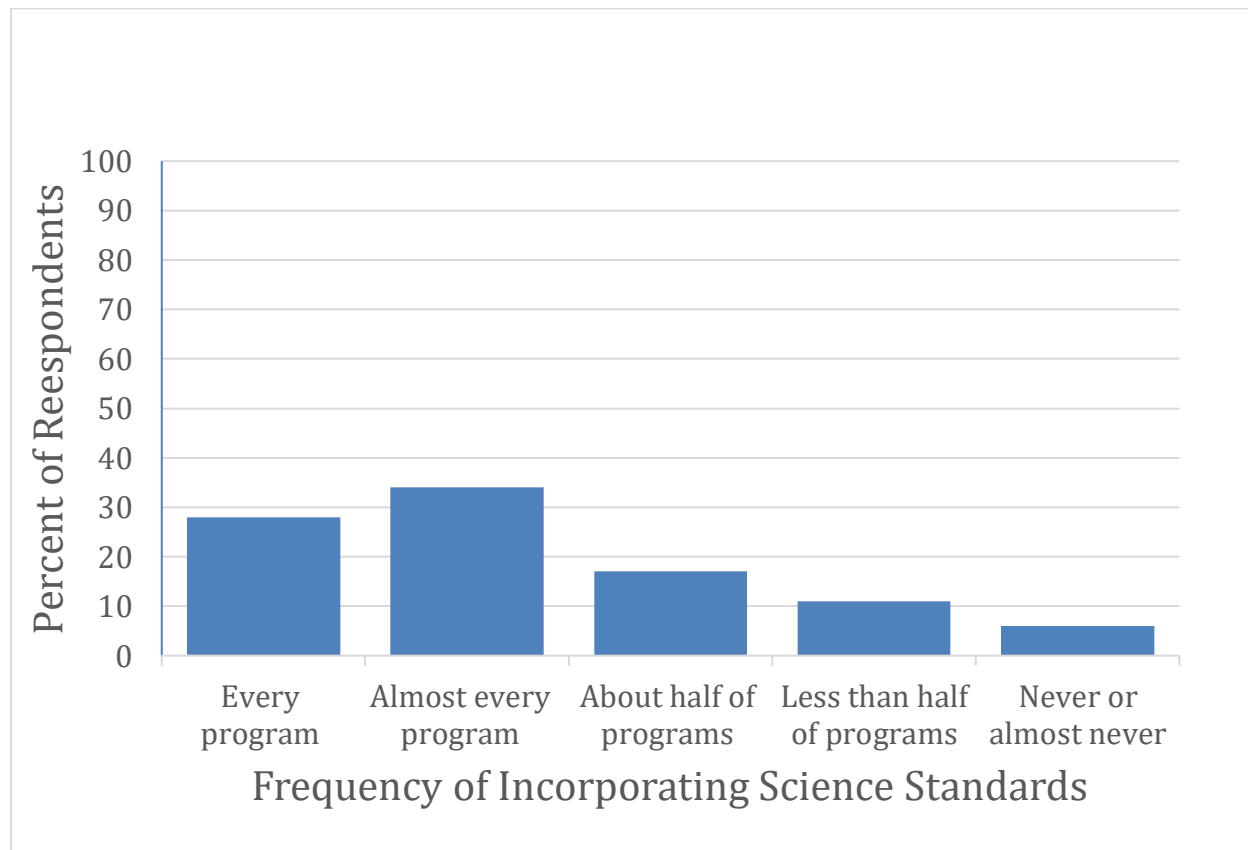
As for incorporating national science standards into K-12 school programming, the data displayed that the majority of respondents (64.9%) incorporate science standards into every or almost every school program. Some respondents shared that they incorporate science standards into about half of their programs (17.7%), while fewer (11.5%) said they incorporate science standards into less than half of their school programs. Only 6.3% of the respondents shared that they never or almost never incorporate science standards into their school programming.

As for incorporating national science standards into K-12 school programming, the data displayed that the majority of respondents (64.9%) incorporate science standards into every or almost every school program (see Figure 2). Some respondents shared that they incorporate science standards into about half of their programs (17.7%), while fewer (11.5%) said they

incorporate science standards into less than half of their school programs. Only 6.3% of the respondents shared that they never or almost never incorporate science standards into their school programming.

Figure 2

Frequency of Incorporating National Science Standards in K-12 School Programming



Note. This bar chart shows the percentage of respondents that incorporate national science standards into their school programming.

Lastly respondents were asked about their familiarity with different teaching methods. All of the respondents were familiar with the outdoor observation, storytelling and hands-on discovery teaching methods. The majority of respondents were familiar with citizen science projects (98.9%), inquiry-based learning (97.8%), service-learning (96.7%), and cooperative learning (87.6%). Fewer respondents were familiar with simulations (80.9%) and describing case studies (62.9%). Only about half of the respondents (51.7%) were familiar with the think-pair-share teaching method.

The respondents that were familiar with the various teaching methods were asked to share if they had utilized the teaching methods in their programs. All of the respondents had used hands-on discovery in their programs. The majority of the respondents had utilized outdoor observation (98.9%), storytelling (95.5%), citizen science projects (93.2%), cooperative learning (91%), inquiry-based learning (89.7%) and service learning (89.4%). Many had utilized think-

pair-share (80.4%) and simulations (78.9%). The fewest number of respondents used the describing case studies (60%) in their programs.

Changes

Respondents were asked to share how their programming has changed in the past 2 years. A total of 70 individuals responded to this question. Six of the responses were deemed incomplete or inadequate and were eliminated bringing the total number of responses to 63.

About a quarter (26%) of respondents shared that their teaching methods have shifted over the past couple of years. Instead of lecture-based programs, the respondents have worked to make their programming more interactive, hands-on, inquiry based, and/or exploratory focused. Many also added that they have begun to add in more time for outdoor exploration and/or nature play. One respondent shared that they have incorporated more storytelling into their programs. Respondents statements like the following:

“More inquiry based learning, and more focus on nature play”

“After Covid I have found kids cannot sit and listen as long...I have altered to more hands-on observing.”

“Less of a lecture type program where you just “dump” facts and information to the students. It is now more of a “throw it out there and find out”. Ask more questions and let the students explore the possibilities.”

Roughly another quarter (24%) said that the number of programs they held changed over the past couple of years. Most shared that they have held fewer programs the past couple of years. For some of the respondents this meant fewer in-school programs or indoor events. Others explained that they have eliminated certain indoor and outdoor public and school programs all together. One respondent shared that they have done more public programs because they had fewer school programming responsibilities. Four of the respondents mentioned that their program numbers were low temporarily, at the peak of the pandemic, but have slowly returned to pre-pandemic numbers.

Another 25% of respondents shared that they have created more distance learning opportunities. Most of these opportunities were virtual and utilized platforms such as Zoom, Facebook Live, YouTube, and websites. A few respondents also shared that they sent activity packets and materials home to individuals.

About 17% of respondents shared that the past 2 years they have worked to align their school programs (field trips and classroom programs) with state and/or national science standards, including Iowa CORE and Next Generation Science Standards (NGSS).

Fourteen percent of respondents mentioned that they have made changes to the space they utilize for programs. These changes included moving more programs outdoors and/or using larger spaces. Just under 13% of the respondents noted that they limited group size at programs. Most of these respondents shared that they wanted people to be able to spread out.

A small number of respondents shared that they have worked on increasing their DEI practices, adding mental health goals, and changing program topics. A handful of respondents also noted that they personally grew as educators and/or interpreters in the past 2 years. These

skills included being more adaptable, developing their teaching style, and gaining experience and knowledge. The only respondents to note this personal growth were those who had been in the field less than 10 years.

Interestingly, only 25% directly cited Covid as the reason for these changes. Only respondents that had been working in the field for greater than 10 years directly stated that the pandemic caused their programming changes. Those that had been working in the field for 10 years or less never used the word Covid in their responses

Relevant Trainings

Respondents were asked about whether they had completed 8 different trainings relevant to the environmental education and/or interpretation field.

The greatest percentage of respondents (95.9%) reported that they had taken Cardiopulmonary Resuscitation (CPR) training (n=98). About half of the respondents (46.9%) reported that they had taken Wilderness First Aid training (n=96).

As for recreation-based training, about 65% of respondents said they had taken Iowa Hunter Education (n=97) and 46.5 % of them had taken the American Canoe Association Canoe and Kayak (n=99) training.

Many respondents had taken environmental education and/or interpretation focused training. About 75% of participants reported taking the Department of Natural Resource's Project Wild & Wet course (n=98). Roughly 61% had taken the Project Learning Tree course. Fewer respondents (21.8%) reported taking NAI's Certified Interpretive Guide training (n=97). The smallest percentage of respondents (n=97) reported taking the Certified Heritage Guide (1%) and Certified Interpretive Trainer training (5.2%).

Those that marked that they had taken a specific training, were then asked a follow up question about how valuable they thought the training was to their profession.

Of the 94 individuals that responded to the CPR question, 88.3% found that the training was either extremely valuable or valuable to their professional work. Forty-five individuals responded to the wilderness first aid training question. The majority of the individuals (91%) found that wilderness first aid training was extremely valuable or valuable to their work.

Many of the respondents also found the recreation-based training to be valuable to their professional work. Of the 63 individuals that took Iowa Hunter Education 84.1% found the course to be valuable. A large percentage (97.8%) of the 45 individuals that responded to the ACA Canoe and Kayak training question found the training to be extremely valuable or valuable to their professional work.

As for the environmental education and interpretation training 85% found Project Learning Tree to be valuable (n=60), while 91.8% found Project Wild and Wet to be valuable (n=73). The respondents (n=20) found the Certified Interpretive Guide training to be slightly less valuable (75%).

Since only a few respondents had taken the Certified Heritage Guide and Certified Interpretive Guide training, it did not give a good image of the value of these trainings to professional work.

Chi-squared tests for independence were run in SPSS to compare the relationship between the number of years respondents had worked in the field and each of the trainings they completed.

Based on the results, there was a significant relationship between the number of years respondents had worked in the field and completion of Project Learning Tree training, $\chi^2(4, n=96) = 15.88, p=0.003$. Those employed in the field longer were more likely to have taken this training. Cramer's V (0.407) was calculated for the variables and showed that there was a moderate association between years employed in the field and the completion of Project Learning Tree.

Similarly, there was a significant relationship between the number of years respondents had worked in the field and completion of Project Wet/Wild, $\chi^2(4, n=95) = 15.623, p=0.004$. Again, those employed in the field longer were more likely to have taken this training. A Cramer's V of 0.406 showed that there was a moderate association between years employed in the field and the completion of Project Wet/Wild.

There was not a significant relationship between the number of years respondents had worked in the field and any of the other trainings. A p-value of 0.05 was considered significant in this study. The Cramer's V for the rest of the variables were less than .3, which showed there were only weak associations between the number of years employed in the field and completion of each of the trainings.

As for the value of the trainings there was no significance found between the number of years employed in the field and how valuable each of the trainings were to the respondents. The Cramer's V values also showed that there were only weak associations between the number of years employed and how valuable respondents found each of the trainings.

3. What practices, if any, are Iowa environmental education and interpretation professionals incorporating in their program development and delivery to promote diversity, equity and inclusion?

Diversity, Equity, and Inclusion

The survey questions asked participants to share their perceptions about the importance of different areas of diversity, equity, and inclusion. The majority of respondents (98%) felt that it was either very important or important to create accessible outdoor spaces for those with disabilities, while only 2.1% felt that it was only somewhat important. None of the respondents felt that creating accessible outdoor spaces was not important at all. Similarly, most respondents (95.9%) felt that it was either very important or important to encourage women to participate in outdoor activities. Another 3.1% found it to be somewhat important to encourage women. Only 1% of the respondents shared that they did not find it important at all to encourage women to

participate. Again, most respondents (91.7%) found it very important or important to create safe outdoor spaces for racially diverse audiences. A greater percentage of respondents found it somewhat important (7.2%) to create safe spaces, but only 1% of questionnaire participants shared that they did not think that creating these safe outdoor spaces was important at all.

Most of respondents (94.1%) found it very important or important to have discussions about promoting inclusion and diversity. Another 6.3% found these discussions to be somewhat important, while none of the respondents shared that it was not important at all to have discussions about including diverse individuals.

Although it was still the majority of respondents, less found it was very important or important (87.5%) to have workplace conversations about equity. Many found it somewhat important (11.5%) to have these conversations. Again, only 1% of respondents shared that they did not think it was important to have these conversations at all.

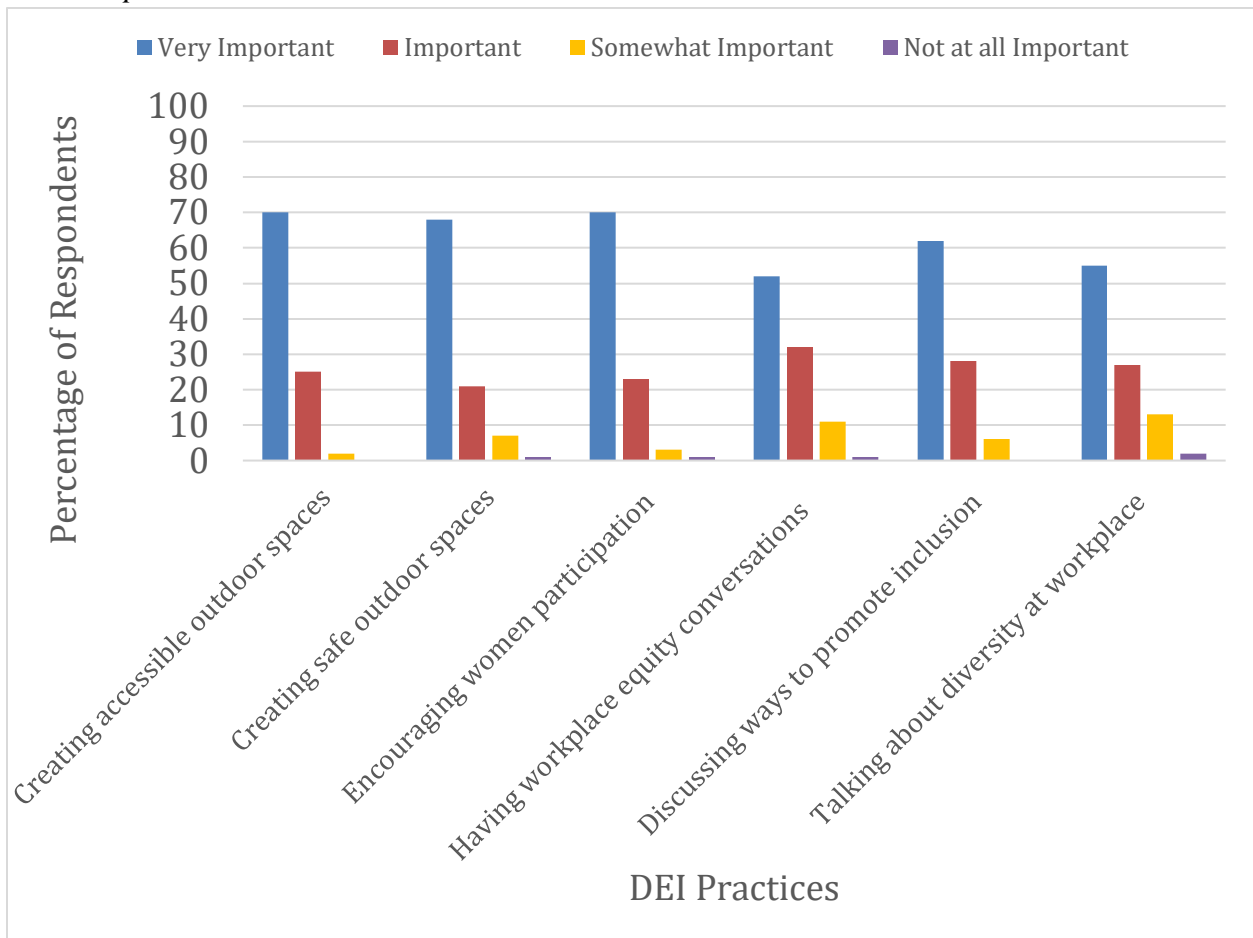
Similarly, 84.5% of respondents thought it was very important or important to talk about diversity at the workplace. A higher percentage of respondents (13.4%) found it to be somewhat important to talk about diversity, while 2.1% did not think it was important to have conversations about diversity at work.

Chi-squared tests for independence were run in SPSS to compare the relationship between the number of years respondents had worked in the field and how important they found each of the DEI scenarios. Another set of chi-square tests of independence were run in SPSS to determine the relationship between gender and how important respondents found each of the DEI scenarios. A p-value of 0.05 was considered significant in this study. Since the p value for each of the variables was greater than 1, there was no significance found between these variables.

Cramer's V was calculated for the variables to determine if there was an association between gender or years employed in the field and how important respondents found each of the DEI scenarios. All of the Cramer's v values were less than 0.3, which showed there were only weak associations between the variables.

Figure 3

Importance of Diversity, Equity, and Inclusion (DEI) Practices Among Environmental Educators and Interpreters



Note. This figure displays how important respondents found different diversity, equity, and inclusion initiatives.

Free Response Questions

Participants responded to a series of free response questions relating directly to different areas of DEI in environmental education and/or interpretation programming. These questions focused on six main categories, which included challenges, physical disabilities, intellectual disabilities, racial diversity, LBGQTA+, and the future of inclusivity.

Challenges

A total of 64 participants responded to this question. Respondents shared their thoughts about the challenges they face providing programming to diverse audiences. 7 major themes arose from the participants' responses. These included concerns about adapting programs, location accessibility, participant needs, connecting with diverse individuals, county population, finding partnerships, and workplace challenges. The sections below go into more detail about each of these main themes. Table 2 includes illustrative quotes from each of the 7 major themes.

Connecting with Diverse Populations

A significant percentage of respondents (35%, 23 participants) stated that reaching diverse populations within their area was a challenge for them. Respondents found reaching diverse populations challenging for a variety of reasons, so this theme was further broken down into the following subcategories connecting with individuals and finding and building partnerships within communities.

Many respondents explained that they struggled to communicate and connect with diverse individuals. Some of the respondents shared that they weren't sure how to begin to reach out and encourage diverse individuals to come to programs. One participant acknowledged this problem by saying "we are missing entire demographics in our public programming and I don't know how to reach out to them, specifically those in poverty or cultural groups." Other respondents focused more on the challenges related to building and finding partnerships within their communities. One participant shared that "finding partnerships and speakers that represent culturally diverse populations" was a challenge.

Participant Needs

A total of 19 respondents listed their concern with various participant needs as a challenge they faced. These needs specifically included lack of transportation to programs, language barriers, conflicting work schedules, physical limitations, and inability to afford program costs.

Location Accessibility

A total of 16 respondents shared that location accessibility was a challenge they faced when trying to provide programs to diverse audiences. Many mentioned the general accessibility of their locations as a limitation. A few of these respondents specifically highlighted that the lack of accessible trails at their parks made providing inclusive programming a challenge. Other respondents noted that their buildings were not accessible to those with physical disabilities.

Lack of Diversity

15 participants mentioned that one of their biggest challenges was that their county population was not diverse. This lack of diversity limited their ability to connect with and provide programming for diverse audiences. None of the participants within less than 1 year employed in the field category stated this as a challenge. However, at least one respondent in each of the other years employed categories listed lack of county diversity as a challenge. The greatest percentage of individuals (45%) stating lack of diversity as a challenge were those working in the field for 11-15. In each of the other employment categories less than 20% of the respondents listed this as a concern.

Workplace Concerns

Eight of the 64 respondents mentioned specific workplace concerns as a reason providing programming to diverse audiences is a challenge. These comments ranged from having workplace conversations about DEI topics, increasing the number of diverse employees, and working with administration on diversity issues.

Outlying Responses

A few outlying responses also came up, which included concerns about adapting programs (4 participants), covid restrictions (1 participant), and increasing personal knowledge about DEI topics (2 participants). These participants mentioned the following,

Table 2. This table displays the number of respondents that mentioned each of the 5 main themes in their free-response answer. A couple of quotes for each theme are included to help explain the themes.

Themes	Number of Respondents	Illustrative Quotes
Connecting with diverse audiences	23	<ul style="list-style-type: none"> • “A lot of times the simple fact that I don't look like them is a barrier.” • “Biggest challenge has been finding contacts within different audiences. There are a specific group of people that seem to respond to our social media and press releases.” • “finding [the] access into groups to let them know about program options” were challenging components.
Participant needs	19	<ul style="list-style-type: none"> • “Language could also be a challenge or barrier so it is important to be flexible and creative in how we plan our programs. Incorporating learning opportunities or experiences that do not involve language (reading and listening) are important.” • “Lower income families are harder to reach because parents are working and unable to bring kids to our programs.” • “Locations of areas owned by county conservations are usually away from cities/towns and requires transportation. We need to partner better with cities/towns to get citizens out to these areas and how to have programs within the cities/towns to bring conservation to them.”
Location accessibility concerns	16	<ul style="list-style-type: none"> • “My outdoor program locations aren't always accessible for those with disabilities.” • “I do not have a wheelchair accessible nature trail to use with students or an easy way to get them down to the lake.” • “Not all of our buildings are ADA accessible, so we struggle to accommodate all students sometimes. We are working on improvements in these areas.”
County population	15	<ul style="list-style-type: none"> • “Persistent underlying idea that we don't live in a diverse area so we don't really have to push ourselves to accommodate diverse audiences. Making big shifts requires a long time.” • “At this point, it is difficult to find diverse audiences. Most of the organizations/groups who request programming from me are white and from European backgrounds.” • “We don't have very much diversity in our region in general, so there are few opportunities to assess whether we're actually providing equitable and inclusive programming”
Workplace concerns	8	<ul style="list-style-type: none"> • “I have struggled to be heard when I bring these topics up with coworkers.” • “Not having diversity currently-In my office we are all white women.”

Physical Disabilities

A total of 81 participants responded to this question. Participants were asked to answer a couple of questions related to programming for those with physical disabilities. The first question asked participants to describe how they included those with physical disabilities into their programming. Six main themes emerged based on the responses, which included accessible infrastructure, adapting programs, inclusive equipment, outside assistance, alternative options, and communication.

Accessible Infrastructure

About a third of the respondents (27) mentioned that they attempted to include those with physical disabilities by providing accessible infrastructure at their program locations. At least one individual in every employment length category mentioned accessible infrastructure. Participants shared that they had nature centers and buildings that complied with ADA requirements. This included having accessible classrooms, bathrooms, tables, and showers within these buildings.

Other respondents highlighted that they tried to hold at least some of their outdoor programs at parks that were easily accessible for those with disabilities. This included areas that had hard surfaced trails, accessible docks, and/or bird blinds.

Adapting Programs

Roughly 34% of respondents (28 participants) stated that they tried to adapt their program, so it met the needs of all participants. Again, at least one individual in every employment length category mentioned that they adapted programs to include those with disabilities.

These program adaptations included modifying specific activities and/or intentionally planning accessible components, so that all participants have a similar experience during the program. The following comments highlight these adaptations.

Other adaptations focused on using inclusive and/or adaptive equipment, so that all program participants were able to be involved in the activity or learning opportunity. For example, some participants highlighted the use of adaptive fishing poles, boat stabilizers, lighter draw bows, speakers/microphones, and electric scooters. Others mentioned that they used a variety of multi-sensory materials and larger manipulatives for those that struggle with gripping objects.

Communication

Communicating about specific needs also came up frequently in the responses. About 16% of the respondents mentioned open communication with either caregivers, teachers, and/or the participants with disabilities as an action they took to be more inclusive. Most mentioned that ideally this communication would happen prior to the start of the respective program. Many

respondents also acknowledged that this communication does not always happen before a program, but when it does it helps the respondent make more inclusive plans for the program. The following comments highlight the communication related actions respondents take.

Outside Assistance

Roughly 13.5% of the respondents (11 respondents) stated that in order to include those with physical disabilities in programming they rely on some type of outside help. This help comes from a multitude of sources, including caregivers, organizations, interpreters, school aids, and teachers. Respondents explained in their comments that these outside sources helped them to be able to provide extra support and appropriate accommodations for those with disabilities.

Alternative Options

Instead of modifying a program or activity, a handful of respondents (8 individuals) mentioned that they will create alternative activities for those with physical disabilities to do during a program. These activities are not the same activities that the rest of the program participants participate in, but they allow the individual with the physical disabilities to learn and explore in their own way.

Outlying Responses

One respondent stated that they currently don't do anything to try to include those with physical disabilities into their programs. Two respondents said that they would like to learn more about ways to include individuals with physical disabilities.

Table 3. This table displays the number of respondents that mentioned each of the 5 main themes in their free-response answer. A couple of quotes for each theme are included to help explain the themes.

Themes	Number of Respondents	Illustrative Quotes
Adapting Programs	28	<ul style="list-style-type: none"> ● <i>“We attempt to make/modify our plan/hike path so every child gets the same experience as those who would have disabilities. The goal is that the kids will not know the difference in what was planned to [be] altered.”</i> ● <i>“By doing simple things like having bigger manipulatives (instead of picking up pumpkin seeds, I have them pick up pinecones if they have issues with their grip). I modify the height placement of things (instead of placing things on the floor, place them on tables....).”</i>
Accessible Infrastructure	27	<ul style="list-style-type: none"> ● <i>“Our new nature center is accessible for physical disabilities... We are building an outdoor natural play scape that will be accessible for physical disabilities.”</i> ● <i>“Ramps, boat stabilizers, flat and hard surfaced trails, special restrooms, shower facilities and tables.”</i>
Communication	13	<ul style="list-style-type: none"> ● <i>“When I know I will have someone with a physical disability in my program I work with the person/ family/ teacher to be sure I am providing a positive experience for them.”</i> ● <i>“I try to ask teachers to let us know if they have any students with physical disabilities.”</i>
Outside Assistance	15	<ul style="list-style-type: none"> ● <i>“School groups/students--we ask instructors beforehand what to expect. We either provide an alternative activity for those students, or alter our location to suit their needs better.”</i> ● <i>“We have had a signer come to a program before to accommodate a hear[ing] impairment.”</i>
Alternative Options	8	<ul style="list-style-type: none"> ● <i>“If it is a trail hike program, we offer something else for that student while the rest of the class goes on the hike.”</i>

The second question that respondents were asked relating to physical disabilities was about what their organization could do to encourage those with these disabilities to attend programs. Roughly a third of the respondents (27 individuals) said that they could create promotional materials that better explained that their programming was open to all individuals. Some respondents mentioned adding information about the accessibility of the park, trails, and activities in the promotional materials, so individuals knew what to expect before attending or registering for the program.

Seventeen respondents stated that they could make more of an attempt to adapt programming, so that those with disabilities could participate more easily. This included purchasing adaptive equipment, modifying activities, and/or changing park locations. Further, thirteen of the survey participants mentioned that their organization could add accessible features to their parks and/or buildings. These features included accessible bathrooms, trails, fishing docks, and ramps. Another 11 respondents stated that their organization could partner with local organizations to better accommodate and reach those with physical disabilities.

Intellectual Disabilities

Adapting Programs

Similar to the questions regarding physical disabilities, survey respondents were asked a couple questions relating to programming for those with intellectual disabilities. The first question again asked the respondents to explain what, if anything, they do to include those with intellectual disabilities during their programs. A total of 67 individuals responded to this question.

Of these 67 respondents, about 45% highlighted that they adapt their program based on the needs of the program participant. Most stated that these adaptations change depending on what the specific individual needs and/or how they learn best. However, some respondents specifically mentioned that they add more hands-on, visual, and sensory components to their program. Others stated that they include adaptive equipment, such as microphones and picture flow-charts, to help participants learn or participate in activities.

Others highlighted that they are more cognizant of their behavior as a presenter. They take more time explaining activities, use audience appropriate vocabulary, add in additional breaks, adjust program goals, and practice patience and flexibility. Some also explained that they use multiple learning styles while teaching to help more individuals understand the program concepts. These thoughts are explained by the following comments.

Creating Partnerships

Another theme that emerged was creating partnerships with outside organizations to help include individuals with intellectual disabilities in programs. About 20% of the respondents said that they created partnerships with organizations dedicated to helping those with disabilities. Some of these partners included Fishing Has No Boundaries, local non-profit groups, and local

groups homes. The various partners assisted the respondents by marketing programs and/or bringing their participants (those with intellectual disabilities) out to various outdoor spaces and programs.

Communication

Roughly 18% of the respondents mentioned that communication was key to their ability to successfully include those with intellectual disabilities into their programming. This communication happened between school aids, teachers, parents, caregivers, and individuals with the disability. Respondents explained that by having open communication prior to the start of the program they were able to better adapt to the needs of the participant. Some respondents also noted that they relied on the advice, assistance and support of the caregiver or school staff member during their program if they needed extra help in a specific situation.

Outlying Responses

A couple respondents mentioned that they offer a wide-range of programs as a way to encourage those with disabilities to attend. A few also stated that they create and advertise programming specifically geared towards those with intellectual disabilities. One respondent stated that their nature center has specified quiet hours in place, so those on the Autism spectrum can enjoy the nature center without added commotion.

Table 4. This table displays the number of respondents that mentioned each of the main themes in their free-response answer. A couple of quotes for each theme are included to help explain the 3 main themes.

Themes	Number of Respondents	Illustrative Quotes
Adapting Programs	30	<ul style="list-style-type: none"> • <i>“Engaging the full range of learning styles and special attention to those who need it most”</i> • <i>“Depending on the challenge and understanding what they are, it is very important to provide opportunity at their level. Some may not like learning with the sense of touch, but do better with sound, etc. Each individual should be able to get an opportunity that the others are getting.”</i>
Creating Partnerships	13	<ul style="list-style-type: none"> • <i>“We host two Fishing Events that is connected to Fishing Has No Boundaries Organizations that caters to intellectual/developmental disabilities.”</i> • <i>“We partner with organizations who work with differently abled individuals, and market to that population.”</i>
Communication	12	<ul style="list-style-type: none"> • <i>“We ask groups and individuals about accommodations they might need when registering and booking programs.”</i> • <i>“We ask their Teachers or Agency for guidance in planning activities that will be suitable for their students or clients.”</i>

A few respondents said that they currently did not do anything to try to encourage this audience to attend their programs.

The second question that respondents were asked relating to intellectual disabilities was about what their organization could do to encourage those with intellectual disabilities to attend programs. A total of 67 individuals responded to this question. Almost half of the respondents (about 45%) said that they could improve their community outreach. Respondents suggested reaching out to local organizations geared towards helping this community, creating partnerships with local organizations, and identifying and contacting local families. Others suggested making improvements to their promotional materials for programs, such as advertising the availability of adaptive equipment and their ability to make necessary accommodations.

About a fourth of the respondents (23.6%) stated that they could create programs for individuals with intellectual disabilities and their families/caregivers. Many respondents felt that designing programming, with intellectual disabilities in mind, would help those with disabilities and their families/caregivers feel more comfortable and welcome.

Roughly 14.5% of the respondents admitted that they weren't sure what they could do to encourage those with intellectual disabilities to attend programs. Some of these individuals also mentioned wanting to get suggestions, do more research, or attend training courses to learn how to better serve this population.

Another 11% of the respondents mentioned that they could make more program adaptations to be more inclusive and welcoming towards those with intellectual disabilities. These respondents suggested updating facilities, purchasing adaptive equipment, creating adaptive backpacks, choosing alternative locations and altering program content as ways to be more inclusive. One respondent shared that they could waive program fees for caregivers.

Racial Diversity

Respondents were asked to share what their organization does to include those that are racially diverse in their programming. The majority of the 66 respondents (47%) stated that they currently do not take any specific actions to include these individuals in their programming. About 61% of those that did not do anything specific to include racially diverse individuals, shared that their programs were open to all and/or they treated all individuals equally. Others stated that their local population was not very diverse, so issues pertaining to racial diversity had not come up for them.

Roughly 20% of respondents stated that they engaged in community outreach to include racially diverse individuals. This included developing partnerships with organizations, reaching out to community leaders, and attending community events to help build relationships.

About 16% of the respondents explained that they focus on and adjust advertising practices to encourage racially diverse individuals to participate. This included translating program advertisements into multiple languages, using photos of diverse individuals, and making conscious choices about wording. Some respondents also mentioned putting advertisements up in

multiple locations to allow more individuals to learn about the program. This included both digital and print advertisements.

Fifteen percent of respondents said that they use inclusive language to encourage diverse individuals to attend programs, including using multiple languages during programs, incorporating stories from different cultures, and hiring interpreters.

When asked about what their organization could do to help encourage racially diverse individuals to come to their programs, many (22%) stated that they could do more community outreach. This included creating partnerships with organizations and community leaders that support racially diverse individuals. Respondents also shared that they could increase their personal activity in community organizations, create affinity groups, and work on strengthening relationships with community members.

Many respondents (20%) also stated that they could make more considerations when it came to advertisements and program publicity. The ideas included translating promotional materials into multiple languages, using diverse photos, adding inclusive words to program descriptions, and putting advertisements in multiple locations in the community.

Eighteen percent of respondents said that they could give special thought to restrictive program elements, such as cost, transportation, program location and language. These respondents explained that they could host free programs, give out scholarships for programs with fees, provide transportation to some parks and programs, hire bilingual staff members, hold programs at multiple locations throughout their community, and translate program materials into multiple languages.

Another 15% said that they could create programs specifically geared towards racially diverse communities. These respondents explained that they could ask diverse presenters to lead programs and/or host programs that cater to diverse populations.

Ten percent said that they were unsure how to encourage this population to come to programs. Of these respondents, 13% agreed that they would like to learn more about the best ways to be more inclusive.

LGBTQA+ Individuals

Respondents were first asked what their organization currently does to provide safe outdoor opportunities for those a part of the LGBTQA+ community. The most common response (55%) among the 60 respondents was that they were unaware of any specific actions being taken to provide inclusive outdoor opportunities to this community. Participants explained that they have not made “special efforts” to include LGBTQA+ individuals. Some elaborated by sharing that they had not had workplace conversations about how to include LGBTQA+ members, Another respondent said they were unaware that these individuals did not feel welcome in outdoor settings. Many respondents simply stated that their programs were open to all individuals. For example:

“We are inclusive to all, but do not target any group specifically other than to have all programs safe, friendly and inclusive to all.”

“I work in a small, rural county where, unfortunately, the LGBTQA+ community is not a community that I have experience with.”

“I do not get this? Does this group think they are unsafe attending events? Anyone is welcome to our presentations/facilities, we are always welcoming and professional. No, we do not have specific topics for this group.”

About 12% of the respondents shared that they developed programming specifically for members of the LGBTQA+ community and allies. These programs ranged from one-time events to monthly nature programs. Some of this programming was geared to adults, while some was open to youth.

Another 10% of the respondents said that they try to use inclusive language to help program participants feel welcome and/or safe. This included refraining from using gender pronouns, asking participants for their preferred pronouns, and adding preferred pronouns to staff name tags and emails. Others stated that they made sure to add their standard non-discrimination language to program publicity.

Some respondents noted that they thought about program locations. They either stated that they tried to make their location safe for LGBTQA+ participants or they held programs at known safe places. Respondents specifically noted that they had gender neutral restroom options and created judgment free zones.

One respondent noted that they were a part of a DEI committee and were currently having conversations about including the LGBTQA+ community. Another participant stated that they were also having workplace discussions about how to include this group.

When the responses were organized and viewed based on the number of years the participant had worked in the field some differences arose. While all categories had respondents state that they were not currently making any efforts to include the LGBTQA+ community, those that had been employed in the field for 16+ years had the greatest percentage of respondents share that they were not making efforts. Roughly 65.5% of the respondents in the 16+ years category were not making special efforts compared to 45.5% in 11-15 years and 35.7% in 6-10 categories. There were very few responses in the 1-5 (1 response) and less than a year category (5 responses), so they were not compared to the other categories.

When asked what their organization could do to encourage LGBTQA+ individuals to attend programming, the majority of the 52 respondents stated that they were unsure (33%). Six of the respondents said they did not have any ideas, but they wanted to learn more about the ways to help include this community.

Just under a third (28.8%) of the respondents said they could do more community outreach. Community outreach included connecting with LGBTQA+ community leaders, partnering with established organizations and groups, and building relationships with members of the LGBTQA+ community.

About 13% of the respondents said they could create programming specifically for members of the LGBTQA+ community. 11.5% stated that they could do a better job of creating safe locations at their parks for these individuals, including adding safe zone signs along trails and having gender neutral bathrooms available. Another 11.5% shared that they could use more inclusive language to help members of the community feel comfortable and welcome. These ideas included using welcoming language during programs and in program publicity.

Future of Inclusivity

Respondents were asked to share what they envisioned the future of inclusivity looking like in the environmental education and interpretation fields. A total of 64 individuals responded to this question. About 41% of the respondents mentioned that ideally, they would see more diverse audiences in their parks and at their programs. Respondents highlighted different areas of diversity including racial, gender, age, sexuality, and diversity in general. Regardless of the highlighted area, many respondents add that they wanted all people to feel welcome and safe at programs and in outdoor spaces.

Many respondents (28%) stated that they envision more diversity among environmental educators and interpreters in the future. Many of these respondents noted that currently the profession is not diverse, especially in terms of race.

Some (8%) shared that they envision learning more about DEI topics, while another 8% stated that they did not see the profession changing in terms of inclusivity. A few respondents said that they envisioned that there would be more inclusive equipment and infrastructure at parks, including trails and program materials. A few also said that they thought they would see a greater connection to nature among children and/or adults. One respondent envisioned more transparency in the profession.

Changes

Respondents were asked to share how their programming has changed in the past 2 years. A total of 70 individuals responded to this question. Six of the responses were deemed incomplete or inadequate and were eliminated bringing the total number of responses to 63.

About a quarter (26%) of respondents shared that their teaching methods have shifted over the past couple of years. Instead of lecture-based programs, the respondents have worked to make their programming more interactive, hands-on, inquiry based, and/or exploratory focused. Many also added that they have begun to add in more time for outdoor exploration and/or nature play. One respondent shared that they have incorporated more storytelling into their programs. For example:

“More inquiry-based learning, and more focus on nature play”

“After Covid [19] I have found kids cannot sit and listen as long... I have altered to more hands-on observing.”

“Less of a lecture type program where you just ‘dump’ facts and information to the students. It is now more of a ‘throw it out there and find out’. Ask more questions and let the students explore the possibilities.”

Roughly another quarter (24%) said that the number of programs they held changed over the past couple of years. Most shared that they have held fewer programs the past couple of years. For some of the respondents this meant fewer in-school programs or indoor events. Others explained that they have eliminated certain indoor and outdoor public and school programs all together. One respondent shared that they have done more public programs because they had fewer school programming responsibilities. Four of the respondents mentioned that their program numbers were low temporarily, at the peak of the pandemic, but have slowly returned to pre-pandemic numbers.

Another 25% of respondents shared that they have created more distance learning opportunities. Most of these opportunities were virtual and utilized platforms such as Zoom, Facebook Live, YouTube, and websites. A few respondents also shared that they sent activity packets and materials home to individuals.

About 17% of respondents shared that the past 2 years they have worked to align their school programs (field trips and classroom programs) with state and/or national science standards, including Iowa CORE and Next Generation Science Standards (NGSS).

Fourteen percent of respondents mentioned that they have made changes to the space they utilize for programs. These changes included moving more programs outdoors and/or using larger spaces. Just under 13% of the respondents noted that they limited group size at programs. Most of these respondents shared that they wanted people to be able to spread out.

A small number of respondents shared that they have worked on increasing their DEI practices, adding mental health goals, and changing program topics. A handful of respondents also noted that they personally grew as educators and/or interpreters in the past 2 years. These skills included being more adaptable, developing their teaching style, and gaining experience and knowledge. The only respondents to note this personal growth were those who had been in the field less than 10 years.

Interestingly, only 25% directly cited Covid as the reason for these changes. Only respondents that had been working in the field for greater than 10 years directly stated that the pandemic caused their programming changes. Those that had been working in the field for 10 years or less never used the word Covid in their responses.

Discussion

The purpose of this study was to assess the role that IAN, NAI, and NAAEE's professional guidelines play in the professional work of Iowa's environmental educators and interpreters. To do this, the study sought to determine if professionals were aware of each of the guidelines and what their perceptions of the professional guidelines were. Additionally, the study looked at how Iowa's professionals are incorporating specific program development and delivery guidelines and DEI practices into their programming. The data suggests that IAN could do more to help professionals learn about the guidelines and incorporate program development guidelines. Additionally, IAN needs to provide more support and resources to encourage professionals to

learn about and successfully implement DEI practices into their programs. The following sections describe the key points in more detail.

Awareness and Perceptions of Professional Guidelines

This study aimed to determine what the current knowledge and perceptions of the IAN, NAI, and NAAEE professional guidelines were among Iowa environmental education and interpretation professionals. The results showed that most environmental educators and interpreters in Iowa were aware that IAN had a set of professional guidelines. Fewer respondents, but still a good portion of the environmental education and interpretation professionals were aware of the NAI guidelines. However, a relatively small percentage of environmental educators and interpreters were aware of the NAAEE guidelines. Almost all of the respondents were members of IAN while fewer respondents were members of NAI and NAAEE. Given this membership data, it makes sense that more of the professionals were aware of the IAN guidelines.

Most of the respondents that were aware of each of the professional guidelines found them to be valuable to their professional work. This positive perception of the guidelines displayed that they are a worthwhile addition to IAN, NAI, and NAAEE. However, those that were employed in the field for a longer period of time were more likely to be aware of each of the professional guidelines than those that had worked in the field for 5 or less years. In addition, the more time a person was employed in the field the more frequently they referenced the standards. Based on this data, IAN, NAI, and NAAEE might need to advertise their guidelines to younger audiences to make them aware of these resources.

Program Development & Implementation

Respondents were asked many questions to determine the extent the IAN, NAI, and NAAEE professional guidelines, relating specifically to program development and delivery, are being incorporated into programming. Writing themes and goals, incorporating different teaching methods into programs, aligning programs to school curriculum, and completing trainings help professionals create and/or deliver high quality programs (Ham, 2016, Tulbure, 2011).

Despite this, only about a third of the respondents wrote out theme statements and goals in preparation for their programs. Interpretation and environmental education literature highlight the importance of setting clear, concise themes and goals, as they help professionals keep their programs focused and relevant (Ham, 2016). Professional development opportunities, such as trainings could assist with this issue. NAI offers the Certified Interpretive Guide training to help professionals and future professionals learn key information and essential skills about the field of interpretation (NAI, n.d.). The results show that the majority of the professionals in Iowa have not taken this training. It would be beneficial for professionals, especially professionals that do not have an educational background in interpretation or environmental education, to complete this training.

Overall, the results displayed that professionals within Iowa were familiar with and utilized many different teaching methods. This is valuable because program participants each have their own “learning style that determines how he/she interacts with his/her learning environment” (Moussa, 2014). Previous research has proven “that students with different learning styles achieve better learning outcomes when confronted with teaching strategies that respond to their learning preferences” (Tulbure, 2011, p.1). Therefore, utilizing a variety of teaching strategies when delivering programs helps all participants connect with the program content more successfully.

All of the respondents provide programs to elementary school students. The majority also provide programming to preschool and middle school aged students as well. These programs, especially field trips, can provide valuable learning opportunities for students as they have the power to excite students and help them positively interact with educational material (Behrendt & Franklin, 2014). Unfortunately, “field trips have become less common due to limited funding and limited available time due to each school systems’ focus on standardized testing” (Behrendt & Franklin, 2014). Based on this reality, it seems to be of growing importance that field trips and classroom programs offered by environmental educators and interpreters align with core academic standards. Figure 3 displays that professionals have clearly listened to the needs of their local teachers and have begun incorporating science standards into their regular school programming. Based on current academic requirements, those that have not begun this alignment process may need to in the near future in order to continue being relevant and connecting with local students and teachers.

Based on the results, many Iowa naturalists have taken time to work on aligning their curriculum with national and/or state science standards over the past 2 years. The Covid-19 pandemic took place during the time period in question, so many respondents noted that their regular public and school programming decreased due to state and federal mandates. Since many educators and interpreters were not able to offer in-person programs for an extended amount of time, a large part of their jobs were eliminated temporarily. Environmental educators and interpreters across Iowa likely had more time to work on time consuming projects, such as curriculum alignment. This effort will benefit their school programming for many years to come.

Many professionals have taken the opportunity to continue learning through various trainings. Some trainings, such as CPR, are widely utilized by Iowa environmental educators and interpreters, while others like the CIG training have fewer professionals choosing to attend. Regardless of the training, the majority of those who had taken a respective training found the opportunity to be valuable to their professional work, which demonstrates the value in continuing education opportunities for professionals. Professionals should continue seeking out opportunities to learn and take advantage of less the popular trainings, so they can improve their program development and delivery skills.

Diversity, equity, and inclusion

Many groups of people including people of color, women, LGBTQA individuals, and those with disabilities, find it challenging to participate in outdoor recreation activities and/or feel unwelcome in outdoor settings for a number of different reasons (Schwartz and Corkery, 2011, Dorsch, 2016, Wesley & Gaarder, 2004, and Burns & Graefe, 2007). The majority of respondents find it either important or very important to encourage diverse individuals to attend programs, find ways to include all program participants, and discuss DEI topics in professional settings.

In the free response questions respondents elaborated and shared ways that they are currently incorporating DEI practices into their regular programming. Based on their responses there are a number of DEI initiatives already being implemented throughout Iowa to encourage different groups of people to attend educational programming.

Disabilities

Those with physical disabilities tend to find it difficult to navigate outdoors if the park infrastructure, such as trails, buildings, and docks, is not accessible (Burns & Graefe, 2007). Many of the respondents acknowledged this concern and mentioned in their responses that their park has some type of accessible infrastructure available including trails, nature centers, bathrooms, shower houses, fishing docks, etc. Some respondents also noted that they try to do at least some of their programming at parks that have accessible infrastructure available instead of solely holding programs at more remote parks.

Accessible infrastructure makes it possible for certain individuals to experience the outdoors, but sometimes, as a number of respondents noted, more needs to be done to make participants with physical disabilities feel welcome (Burns & Graefe, 2007). Many respondents also said that they try to adapt their programming so that all individuals can participate in the planned activities. This included hiking on paved surfaces, using adaptive equipment, and changing the location of the program to a place accessible for all participants. One respondent shared that they publicize the accessible and inaccessible features of their programming, so that participants know what to expect prior to attending or registering for the event. These modifications can help programming be more inclusive of those with physical limitations.

Those with intellectual disabilities also face barriers when it comes to attending programs or recreating outdoors. They have reported feeling incapable and unsure of their ability to participate in outdoor activities (Dorsch et al., 2016). Many respondents shared that they adapt their programming and program materials to meet the needs of the specific participant. This included incorporating more hands-on activities, providing multiple activities to meet different learning styles, having sensory items available, and making flow charts for the program. A large number of respondents highlighted that they would communicate with caregivers and school staff, such as aids and teachers, to help them modify their program in a valuable way for the participant with the disability.

Individuals may also have physical disabilities that accompany their intellectual disability, so the modifications mentioned in the physical disability section above would benefit this group as well. However, very few of the respondents mentioned location modifications, adding accessibility statements to promotional material, or using adaptive equipment for this group. This serves as a valuable reminder that making intentional modifications to include one group of individuals can end up making programming accessible for many others.

Racially Diverse

Historically, the outdoor programs and the outdoor recreation field have catered towards the needs and desires of white, heterosexual males. Unfortunately, this reality has continued to shape the narrative as “nonwhite racial/ethnic groups in the United States participate in outdoor recreation at significantly lower levels” (Schwartz & Corkery, 2011). People of color have shared many reasons for feeling unwelcome and unsafe in natural settings and at educational programming, including worrying about language barriers, program cost, cultural differences, transportation and discriminatory behaviors by other park users (Dowart, Smith, & Patterson, 2019, Hong & Anderson, 2005, Schnell, 2000). Many also indicated that they hadn’t been exposed to outdoor activities as a child and/or felt that outdoor recreation was for white individuals (Dowart, Smith, & Patterson, 2019).

Some respondents shared that to help racially diverse individuals feel welcome they have begun to create partnerships with local organizations and build relationships with community leaders. Others make conscious decisions to use diverse promotional photos, inclusive language, translating program publicity, and diverse stories during programs to make opportunities feel more welcoming. People of color have shared that they often lack outdoor role models who look like them, which makes them hesitant and uncomfortable when trying to participate in outdoor activities (Roberts and Henderson, 1997). For this reason, creating partnerships and improving publicity are vital to helping make the outdoors more inclusive to people of color.

LGBTQA+

Other individuals, including those a part of the LGBTQA+ communities, have also faced barriers and marginalization when participating in environmental education and outdoor opportunities (Gough, 2020). Even the Boy Scouts of America (BSA), an outdoor related organization, openly discriminates against members of this community (Johnson, 2015). For many years they did not allow openly gay participants and leaders to join BSA (Health, 2022). Although these discriminatory policies have since been eliminated, the “policy has left its mark not only by excluding generations of LGBTQA+ youth from experiencing the outdoors but reinforcing structural discrimination in outdoor recreation culture” (Health, 2022).

Until recently, LGBTQA+ individuals have also been largely ignored in the environmental education and interpretation field. Even the “voices of lesbian and gay outdoor professionals” have proven to be “virtually non-existent” (Warren, 2015). While some educators and interpreters in Iowa shared that they are trying to create special programming for this group

and build relationships with LGBTQA+ individuals, the majority of the respondents stated that they currently do nothing to promote the inclusion of LGBTQA+ individuals. In fact, many shared that they were unaware that LGBTQA+ individuals faced barriers when choosing to recreate outdoors, showing that the voices of these individuals are likely still being overlooked to some extent.

Overall, the data suggested that environmental educators and interpreters in Iowa have a lack of knowledge about how to include those that identify as LGBTQA+ proving that there is still room for improvement.

Suggested DEI Improvements

Despite the actions being taken to promote DEI practices throughout Iowa, the results of this study have also shown that there is much more work to be done in this area. While many shared that they are taking steps to create inclusive programs and spaces, many others shared that they weren't taking any actions, especially when it came to racial and LGBTQA diversity, because they did not live in diverse counties. Even so, there are DEI steps that could be taken such as learning about potential barriers, highlighting stories from different cultures/races during programs, and inviting diverse speakers to present (Schnell, 2000, Janke & Baker, 2021). These actions can create a more well-rounded and inclusive experience for all participants regardless of race, sexual orientation, and ability level.

Respondents also highlighted many actions that they or their organization could do to improve their DEI practices. A few participants mentioned that their workplace and the environmental education and interpretation profession in general lacked diversity among staff. The vast majority of participants in this study (94%, n=88) identified as white, indicating that there does seem to be a lack of racial diversity at least among Iowa environmental educators and interpreters.

Multiple respondents pointed out that this lack of diversity among professionals can make it difficult to encourage diverse audiences to attend programs. One respondent noted "I think it is difficult for a white woman to have credibility as a leader encouraging black and brown participation". The natural resource field, including environmental education and interpretation, has historically been composed of "men, White people, and able-bodied people" (Batavia et al., 2020). Respondents expressed the need and desire to work on diversifying their workplace so that diverse participants felt more accepted and welcome attending programs.

Diversifying the profession needs to begin with students, as individuals need to be academically qualified in order to be considered during the application process. Unfortunately, STEM (science, technology, engineering, and mathematics) fields, including natural resource sciences, tend to lack diversity among students (Batavia et al., 2020). Little can be done to diversify workplaces if diverse individuals are not applying or are underqualified for natural resource jobs. Professionals need to encourage students of all ages, abilities, and backgrounds to explore natural resource professions.

Respondents frequently suggested creating partnerships with local organizations and community leaders and inviting diverse individuals to lead programs as a way to encourage diverse audiences to attend programs. They also mentioned that promotional materials should be improved, so that the images and languages used reflected the diversity in their area. Having trusted individuals promote and coordinate programs can help diverse individuals feel more comfortable (Schnell, 2000). Exposing diverse individuals to the outdoors and interacting with them at programs may encourage them to continue recreating outdoors and inspire them to pursue a future in natural resource professions.

When asked about the future of inclusivity in Iowa, many respondents stated that they envisioned that they would like to see more diverse individuals recreating at their parks and attending their programs. Others shared that they hoped there would be more diversity among the professional environmental educators and interpreters across the state. Continuing to make improvements to DEI practices and finding creative ways to reach a wider range of audiences will help make a more diverse future a greater possibility.

Conclusion

In general, Iowa's environmental educators and interpreters had positive perceptions of professional guidelines. However, many respondents had not read the guidelines for environmental education and/or interpretation organization, especially NAI and NAAE's guidelines. In order for them to be effective and valuable, professionals need to consume and implement the guidelines. Each of their organizations, IAN, NAAEE, and NAI, could benefit from making more members aware of their guidelines and encouraging professionals to take time to read them.

Although not all of the respondents had read the professional guidelines for each organization, they were still implementing many of the suggested guidelines into their regular programming. Writing goals, determining objectives, incorporating multiple teaching strategies, attending trainings, aligning programs with academic curriculum, and integrating DEI practices are all necessary for producing high-quality and relevant programming (Ham, 2016, Tulbure, 2011, Behrendt & Franklin, 2014, Caputo, 2022).

While there are DEI practices being implemented throughout Iowa, overall, there is still a need to improve in this area. While many respondents stated that they treat all individuals the same regardless of race, sexuality, or disability status. Universal respect is important and necessary, however based on previous research it may not be enough to make certain individuals feel welcome and comfortable attending programming (Schnell, 2000). This makes it essential that Iowa environmental educators and interpreters continue improving their DEI practices.

When it comes to DEI, best practices are constantly evolving, so it is important for professionals to continue to learn and research to keep their programs and practices relevant. The NAI Legacy article explains to be "truly equitable means that those places will represent a beautiful and diverse tapestry of backgrounds and identities" (Caputo, 2022, p.4). Professionals

need to continue taking steps to make their work inclusive, accessible, and welcoming, so that all individuals feel welcome attending programs and recreating outdoors.

Recommendations

Based on the survey results, recommendations were given for improving and updating IAN's professional guidelines. They were crafted along with an explanation about why these changes should be implemented.

1. As the results displayed, many naturalists were not aware that IAN, NAI, and NAAEE had professional guidelines. Many of those that were aware of the guidelines had not read them. IAN should send out a link to their guidelines once a year to make members aware they exist and to encourage members to take time to read the guidelines. Ideally, IAN would also send out a link to the NAI and NAAEE guidelines as well. Sending direct links to the documents would make it easy for members to find the guidelines and highlight the importance of reviewing the information periodically.
2. A section detailing the necessity of aligning school programs with current science standards should be included in the IAN standards. The need to align school programs with state and national science standards seems to be important and of growing concern to the profession. Findings from the study show that many professionals have already aligned or started to align their school programs to these standards proving that those working in the field need to understand how to read and interpret science standards. After gaining familiarity with the science standards, educators and interpreters need to be able to develop activities and programs around the core topics within the science standards to best serve the current academic needs of their teachers and students.
3. The Certified Interpretive Guide training, offered by NAI, should be added to the current list of training highlighted in the standards. The results indicate that many professionals have taken this training. Overwhelmingly, those that have taken the CIG have found it to be valuable to their professional work. This training could help inspire new ideas and help professionals develop new skills, so making professionals aware of the training through the IAN guidelines would help support the profession.
4. A standard pertaining to learning and utilizing a variety of different teaching methods should be added to the guidelines. Professionals should be aware and familiar with multiple teaching methods, so that they are able to incorporate them when appropriate. Each participant learns differently, so using a variety of methods during a program can foster inclusive environments and help participants connect with the material better. The results display that there are some teaching methods that professionals are familiar with and incorporate into programming frequently. However, there are also teaching

methods that professionals are overwhelmingly unfamiliar with and do not use frequently. Listing teaching methods, as NAAEE does in their guidelines, could help inspire professionals within IAN to learn about these methods.

5. A section describing expected diversity, equity and inclusion practices should be included in the professional guidelines. Despite DEI being an important and relevant topic within the environmental education and interpretation fields, the IAN guidelines make no mention of DEI practices in their current guidelines. This section would set forth the expectation that environmental educators and interpreters should create welcoming environments and accessible programs. NAAEE's DEI guideline reads as follows, "Create a supportive, safe, culturally relevant, culturally responsive, accessible, and welcoming learning environment" (NAAEE, 2022). Ideally the IAN guideline would be similar to this. Additionally, many professionals stated their desire to learn how to be more inclusive and reduce barriers. The IAN guideline should take this desire into consideration and include the need for continuing DEI education to learn how to best serve diverse audiences.

6. Creating a diversity committee within IAN would be a valuable addition to the organization. This committee could focus on adding DEI expectations to the IAN professional guidelines. They could also add value to IAN by making an equity statement and researching ways for IAN members to incorporate DEI practices into their regular programming.

The Minnesota Naturalists' Association (MNA) is an organization with similar goals and opportunities as IAN (Minnesota Naturalists' Association [MNA], n.d.). MNA recently formed their own diversity committee and created their own equity statement. This committee is dedicated to sharing DEI information with other members and advancing DEI practices within Minnesota environmental education and interpretation. The equity statement that the committee wrote outlines their organizational DEI goals (MNA, n.d.). The MNA committee highlights that the "statement will remain a draft to guide and hold us accountable" (MNA, n.d., para.5). Since it is a draft, as information and best practices change the statement can easily change too. IAN could benefit from a similar equity statement to encourage members to make DEI a priority.

7. Multiple respondents mentioned that they would like to continue learning about DEI practices and topics. To help members improve their DEI work IAN should host DEI trainings for members. These trainings could become a part of the in-person IAN workshops, or they could be hosted virtually using Zoom (or another similar platform). IAN could also periodically send DEI resources and articles over the IAN listserv to help members stay up to date on current information. If a DEI committee was established,

organizing training opportunities and sending out resources could be part of the committee's duties.

Limitations

This study has a few limitations including the sampling method that was used. Participants were not randomly chosen to participate in the survey, which means the results are not generalizable beyond IAN members. In addition, nonresponse bias also could be a limitation. Those that chose not to participate or were not included in the sampling frame might have thoughts that differ from those that completed the survey. Some survey participants chose to skip questions, as well. Lastly, although the responses were anonymous, individuals may have felt pressure to answer questions in a positive way. In the future it may be beneficial to conduct a study assessing various behaviors pertaining to the guidelines to see if respondents' perceptions follow their actual behaviors. Despite these limitations, the data should still provide enough information to know whether or not areas of the IAN professional guidelines should be further assessed and/or updated.

Further Research

Future studies could be done to learn more about educator and interpreter's perception and implementation of specific components of the NAI, NAAEE, and IAN professional guidelines. Quite a few of the respondents mentioned that they are not incorporating national science standards into all of their regular school programming. It would be beneficial to learn more about the reasons why educators/interpreters choose not to incorporate national standards into all or some of their programs. It would also be useful to know how frequently teachers utilize classroom programs and field trips that do not align with their science curriculum.

While every respondent said that they did programming for elementary students, the data displayed that many of the respondents do not do programming for middle school, high school, and college aged students. It would be beneficial to learn more about the limitations educators and interpreters face when trying to present programs middle school through college aged students.

Lastly, it would be ideal to conduct this survey in Iowa again in 5 or more years to see if any of the DEI practices and perceptions have changed. It could also be useful to extend this study to educators and interpreters in other states to learn more about their thoughts on DEI topics.

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Appendix A.

Survey Instrument

Environmental Education and Interpretation Professional Guidelines

Thank you for taking the time to complete this questionnaire. Your responses will help us learn about environmental education and interpretation practices.

This questionnaire will take you between 10-15 minutes to complete. The answers you provide throughout the questionnaire will be confidential. Your participation is also voluntary, so you are able to stop the questionnaire at any time. If you have any questions, please feel free to contact Bobbi Donovan at donov325@umn.edu.

When you are ready to begin the questionnaire, please click the red arrow at the bottom of your screen.

General Professional Guidelines Section

1. How important, if at all, do you feel professional guidelines are for the following areas?

	Very important	Important	Somewhat Important	Not at all important
Stating skills naturalists should have	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing educational programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implementing educational programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stating professional responsibilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promoting inclusive environments for diverse audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Are you aware that the *Iowa Association of Naturalists (IAN)* has a set of professional standards for naturalists/environmental educators to incorporate into their work?

- Yes
- No

3. Have you ever read these standards?

Yes

No

4. How frequently, if at all, have you referenced these standards in the past 12 months?

About once a week

About once a month

A few times

Once

Never

5. Are these guidelines valuable to your professional work?

Yes

No

Unsure

Not Applicable

6. Are you aware that the *National Association for Interpretation (NAI)* has a set of professional standards for naturalists/environmental educators to incorporate into their work?

Yes

No

7. Have you ever read these standards?

Yes

No

8. How frequently, if at all, have you referenced these standards in the past 12 months?

About once a week

About once a month

A few times

Once

Never

9. Are these guidelines valuable to your professional work?

- Yes
- No
- Unsure
- Not Applicable

10. Are you aware that the *North American Association for Environmental Education (NAAEE)* has a set of professional standards for naturalists/environmental educators to incorporate into their work?

- Yes
- No

11. Have you ever read these standards?

- Yes
- No

12. How frequently, if at all, have you referenced these standards in the past 12 months?

- About once a week
- About once a month
- A few times
- Once
- Never

13. Are these guidelines valuable to your professional work?

- Yes
- No
- Unsure
- Not Applicable

14. Are you **currently** working in the environmental education or interpretation field

- Yes
- No

15. Are you?	Yes	No
Retired from the environmental education or interpretation field	<input type="radio"/>	<input type="radio"/>
A college or university student	<input type="radio"/>	<input type="radio"/>
A high school student	<input type="radio"/>	<input type="radio"/>

16. Are you currently working *in Iowa*?

- Yes
- No (please describe) _____

17. How many years have you been employed in the environmental education or interpretation field?

***Display only if 'yes' marked for Q14**

- Less than 1 year
- 1-5
- 6-10
- 11 - 15
- 16 or more

18. How many years were you employed in the environmental education or interpretation field?

***Display only if 'retired' marked for Q15**

- Less than 1 year
- 1-5
- 6-10
- 11 - 15
- 16 or more

19. Would you like to work in the environmental education or interpretation field after you graduate?

***Display only if 'college or high school student' marked for Q14**

- Yes
- No
- Unsure

Knowledge and Environmental Literacy Section

20. How knowledgeable, if at all, are you in the following areas?

	Extremely knowledgeable	Knowledgeable	Slightly knowledgeable	Not at all knowledgeable
Astronomy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entomology (Insects)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nonflowering plants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Historical environmental issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Current environmental issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
History of environmental education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
History of environmental Interpretation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. How important, if at all, is it to know about local ...

	Extremely Important	Important	Slightly Important	Not At All Important
Ecosystems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Archeological information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indigenous <i>history</i> ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indigenous <i>traditions</i> ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Have you completed these trainings?

	Yes	No
American Canoe Association (ACA) Canoe and Kayak	<input type="radio"/>	<input type="radio"/>
Cardiopulmonary Resuscitation (CPR)	<input type="radio"/>	<input type="radio"/>
Certified Heritage Guide	<input type="radio"/>	<input type="radio"/>
Certified Interpretive Guide (CIG)	<input type="radio"/>	<input type="radio"/>
Certified Interpretative Trainer (CIT)	<input type="radio"/>	<input type="radio"/>
Iowa Hunter Education	<input type="radio"/>	<input type="radio"/>
Project Learning Tree	<input type="radio"/>	<input type="radio"/>
Project Wild/Project Wet	<input type="radio"/>	<input type="radio"/>
Wilderness First Aid Training	<input type="radio"/>	<input type="radio"/>

23. How valuable have these trainings been for your professional work?

***Display only if 'yes' marked for training in Q22**

	Extremely Valuable	Valuable	Slightly Valuable	Not at all Valuable
American Canoe Association (ACA) Canoe and Kayak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cardiopulmonary resuscitation (CPR)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certified Heritage Guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certified Interpretive Guide (CIG)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certified Interpretative Trainer (CIT)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Iowa Hunter Education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Learning Tree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Wild/Project Wet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wilderness 1st Aid Training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Program Development Section

24. How frequently, if at all, do you write out goals for your programs?

- Every program
- More than ¾ of the programs
- About half of the programs
- Less than half of the programs
- Never or almost never

25. How frequently, if at all, do you write theme statements for your programs?

- Every program
- More than $\frac{3}{4}$ of the programs
- About half of the programs
- Less than half of the programs
- Never or almost never

26. Which schools, if any, do you provide programming for?

	Yes	No
Preschool	<input type="radio"/>	<input type="radio"/>
Elementary School (K-6)	<input type="radio"/>	<input type="radio"/>
Junior High School (7-8)	<input type="radio"/>	<input type="radio"/>
High School (8-12)	<input type="radio"/>	<input type="radio"/>
College/Universities	<input type="radio"/>	<input type="radio"/>

27. How frequently, if at all, do you incorporate national science standards into your k-12 school programming?

- Every school program
- Almost every school program
- About half of the programs
- Less than half of the programs
- Never or almost never

28. How frequently, if at all, did you write out goals for your programs?

- Every program
- More than ¾ of the programs
- About half of the programs
- Less than half of the programs
- Never or almost never

29. How frequently, if at all, did you write theme statements for your programs?

- Every program
- More than ¾ of the programs
- About half of the programs
- Less than half of the programs
- Never or almost never

30. Which schools, if any, did you provide programming for?

***Display only if 'retired' marked for Q16**

	Yes	No
Preschool	<input type="radio"/>	<input type="radio"/>
Elementary School (K-6)	<input type="radio"/>	<input type="radio"/>
Junior High School (7-8)	<input type="radio"/>	<input type="radio"/>
High School (8-12)	<input type="radio"/>	<input type="radio"/>
College/Universities	<input type="radio"/>	<input type="radio"/>

31. How frequently, if at all, did you incorporate national science standards into your k-12 school programming?

***Display only if 'retired' marked for Q16**

- Every school program
- Almost every school program
- About half of the programs
- Less than half of the programs
- Never or almost never

Diversity, Equity, and Inclusion Section

Now some questions about diversity, equity, and inclusion within the environmental education and interpretation field. Please provide your honest thoughts and opinions.

32. How important, if at all, do you think these actions are?

	Very important	Important	Somewhat Important	Not at all important
Creating accessible outdoor spaces for those with disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating safe outdoor spaces for racially diverse audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouraging women to participate in outdoor activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having workplace conversations about equity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discussing ways to promote inclusion for diverse individuals at programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talking about diversity at the workplace	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33. What challenges, if any, have you faced providing programming to diverse audiences?

***Only display Q34-45 if “yes” marked for Q14**

34. In what ways, if any, do you try to include those with *physical disabilities* in your programming?

35. What, if anything, could your organization do to encourage those with *physical disabilities* to attend your programming?

36. In what ways, if any, do you try to include those with *intellectual/developmental disabilities* in your programming?

37. What, if anything, could your organization do to encourage those with *intellectual/developmental disabilities* to attend your programming?

38. In what ways, if any, do you try to include those who are *racially diverse* in your programming?

39. What, if anything, could your organization do to encourage those who are *racially diverse* to attend your programming?

40. In what ways, if any, does your organization create safe outdoor opportunities for the **LGBTQA+ community**?

41. What, if anything, could your organization do to encourage those in the **LGBTQA+ community** to attend your programming?

42. Does your organization currently offer any programming targeted to women?

Yes

No

43. What are key characteristics of your women-only programming? (i.e. main activities, length of program(s), frequency of program(s), average number of participants, etc.)

44. What do you envision the future of inclusivity in this profession looking like?

***Only display Q45-55 if “no” marked for Q14**

45. What challenges, if any, did you face trying to provide programming to diverse audiences?

46. In what ways, if any, did you try to include those with *physical disabilities* in your programming?

47. What, if anything, could your organization have done to help encourage those with *physical disabilities* to attend your programming?
48. In what ways, if any, did you try to include those with *intellectual/developmental disabilities* in your programming?
49. What, if anything, could your organization have done to help encourage those with *intellectual/developmental disabilities* to attend your programming?
50. In what ways, if any, did you try to include those that are *racially diverse* in your programming?
51. What, if anything, could your organization could have done to help encourage *racially diverse* individuals to attend your programming?
52. In what ways, if any, did your organization create safe outdoor opportunities for the **LGBTQA+ community**?
53. What, if anything, could your organization have done to encourage those in the **LGBTQA+ community** to attend your programming?
54. Did your organization offer any programming targeted to women?
- Yes
- No
55. What were key characteristics of your women-only programming? (i.e. main activities, length of program(s), frequency of program(s), average number of participants, etc.)

56. What do you envision the future of inclusivity in this profession looking like?

***Only display Q57-64 if “high school or college student” marked for Q16**

57. What challenges, if any, do you foresee facing when providing programming to diverse audiences?

58. Now some questions about a few different areas of diversity, equity, and inclusion.

59. What, if anything, should organizations do to encourage those with *physical disabilities* to attend programming?

60. What, if anything, should organizations do to help encourage those with *intellectual/developmental disabilities* to attend programming?

61. What, if anything, should organizations do to help encourage those that are *racially diverse* to attend programming?

62. What, if anything, should organizations do to help encourage *women* to attend programming?

63. What, if anything, should organizations do to encourage those in the **LGBTQA+ community** to attend programming?

64. What do you envision the future of inclusivity in this profession looking like?

Program Implementation Section

65. Are you familiar with the following teaching methods?

	Yes	No
Storytelling	<input type="radio"/>	<input type="radio"/>
Hands-on discovery	<input type="radio"/>	<input type="radio"/>
Service-learning	<input type="radio"/>	<input type="radio"/>
Inquiry-based learning	<input type="radio"/>	<input type="radio"/>
Simulations	<input type="radio"/>	<input type="radio"/>
Describing case studies	<input type="radio"/>	<input type="radio"/>
Outdoor observation	<input type="radio"/>	<input type="radio"/>
Cooperative learning	<input type="radio"/>	<input type="radio"/>
Citizen science projects (monarch tagging, etc.)	<input type="radio"/>	<input type="radio"/>
Think-pair-share	<input type="radio"/>	<input type="radio"/>

66. Have you used these teaching methods in your programming?

***Display only if 'yes' marked for methods in Q65**

	Yes	No
Storytelling	<input type="radio"/>	<input type="radio"/>
Hands-on discovery	<input type="radio"/>	<input type="radio"/>
Service-learning	<input type="radio"/>	<input type="radio"/>
Inquiry-based learning	<input type="radio"/>	<input type="radio"/>
Simulations	<input type="radio"/>	<input type="radio"/>
Describing case studies	<input type="radio"/>	<input type="radio"/>
Outdoor observation	<input type="radio"/>	<input type="radio"/>
Cooperative learning	<input type="radio"/>	<input type="radio"/>
Citizen science projects (monarch tagging, etc.)	<input type="radio"/>	<input type="radio"/>
Think-pair-share	<input type="radio"/>	<input type="radio"/>

67. How has your programming changed, if at all, in the last two years?

Demographic Section

68. Which organizations are you currently a member of?

	Yes	No
Iowa Association of Naturalists (IAN)	<input type="radio"/>	<input type="radio"/>
National Association for Interpretation (NAI)	<input type="radio"/>	<input type="radio"/>
North American Association of Environmental Education (NAAEE)	<input type="radio"/>	<input type="radio"/>

69. Which race(s) best describes you?

- American Indian or Alaskan Native
- Asian
- Black or African American
- Native Hawaiian or Pacific Islander
- White
- Other _____
- Prefer not to say

70. Which gender do you identify with?

- Male
- Female
- Non-binary / third gender
- Prefer to self-describe _____
- Prefer not to say

Appendix B.

The following tables display how the IAN, NAI, and NAAEE professional guidelines compare to each other. The ‘X’ indicates that the topic was stated within the organization’s guidelines.

Table A. Comparison of naturalist/environmental educator knowledge of profession and environmental literacy areas

	IAN	NAI	NAAEE
Incorporate national science standards, school curricula into programs	X	X	X
Write program goals and objectives	X	X	X <i>*Emphasis on environmental literacy and environmental quality</i>
Craft themes for programs		X	
Use of props in programs		X	
Incorporating Tilden’s principles	X	X <i>* Does not use term ‘Tilden’s’ principles, but incorporates some of the ideas</i>	
Use Social Media	X	X	

Table B. Comparison of Program Delivery/Implementation & Communication Skills

	IAN	NAI	NAAEE
Utilize different teaching methods	X	X	X
Ability to deliver programs in different locations	X		
Use of stories in programs	X	X	X
Know how to use/incorporate citizen science		X	
Understand different learning styles and trends	X		X
Emphasize education not advocacy			X
Work with schools	X	X	X

Table C. Certifications and Training

	IAN	NAI	NAAEE
CPR / 1st Aid	X		
Wilderness 1st Aid	X		
Hunter Ed	X		
American Canoe Association Training	X		
Wildlife Rehabilitation	X		
Teaching certification/classroom experience	X		
Project Wild	X	X	
Project Learning Tree			
Certified Interpretive Guide (CIG)		X	
Certified Interpretive Trainer (CIT)		X	
Certified Heritage Interpreter		X	

*NAAEE doesn't mention any specifically, but vaguely mentions that educators should have certification they need.

Table D. Diversity, Inclusion, & Equity

	IAN	NAI	NAAEE
Consider learner’s safety/safe environment	X <i>*Broadly states that all should be safe during programs</i>	X	X
Apply the requirements of the Americans with Disabilities Act		X	X
Use multisensory techniques for different learners		X	
Identify and model methods for presenting the environment or environmental issues in appropriate and engaging ways for learners of different ages, backgrounds, levels of knowledge, and developmental abilities.			X
Foster equity by creating opportunities for all learners to have access to and participate in environmental education.			X
Recognize and acknowledge the validity of varying cultural perspectives present in groups of learners.			X
Sensitive to the culture, ethnic background, and gender of the audience			X