Many recent conversations have reminded me that there is often a substantial difference between the “academic” approach to interpretation and research and the practical field experience and perception of the value of research. I find myself in the unique position of trying to raise money and support for interpretive programs both in park and in school settings. Many of us in the field know the value of such endeavors but to demonstrate and to document those impacts is indeed another story.

This story is one that the Journal of Interpretation Research is dedicated to investigating and telling. The problem is that the outcome of this work is often inaccessible to those who could benefit from it the most. If critical evaluation and assessment of what we do, why we do it, and what results from it, is what will truly advance and develop our profession, how then can we ensure that the information from that research reaches those practitioners and managers who could potentially benefit from it the most? How can we make research accessible in both its distribution and in its message?

There are two critical aspects to this issue. Getting the information to those in the field who do not subscribe to the Journal is one but an even more critical one is communicating that information in a way that makes it accessible to the practitioner. I receive phone calls all the time from interpreters in the field asking me what the results of a study really mean. For these conversations, I find myself “interpreting” the science of interpretation. Certainly there must be a middle ground, a place where the integrity of the science is clear without obfuscating the impacts. There is a difference between practical significance and statistical significance but aren’t both important for the advancement of the field?

I don’t necessarily have an answer but instead am turning to my tribe. What can we do? How can we continue to conduct empirical work that advances our field while making it accessible to those who could test it in the real world to see if it works the way we hypothesize (and then perhaps let us know)? Am I dreaming? As one of the tribe that now raises critical support for interpretive programming, I want both, and I need both.

The role of research is to educate, to enlighten, and to guide. Research is conducted because we want to know more, and because we want to do better. It must be made applicable to the practitioner, the manager, and the public. It needs to answer useful questions, and ask the unanswerable ones. In order to understand the best use of
precious economic, human, and biological resources, research must be adequately funded. It should not be treated as an external afterthought to programming, but instead included as an integral part of the process. The survival of interpretation depends on the critical examination of what is done, how it is done, and what results from it. Research is the foundation of the practice of the science of interpretation.

I look forward to the future developments of our field through your quality submissions to JIR.

—C
Assessing the Effectiveness of Artistic Place-Based Climate Change Interpretation

Austin Barrett
Department of Recreation, Park, and Tourism Management
The Pennsylvania State University
801 Ford Building
University Park, PA 16802
(972) 900-9796
Austin@psu.edu

Andrew J. Mowen
The Pennsylvania State University

Abstract
This paper analyzed the effectiveness of an artistic place-based climate change interpretive program at Glacier National Park in Montana. Utilizing the framework of place-based climate change communication and the use of artistic interpretive methods, this study offered support for the efficacy of communicating climate change at a climate-impacted location. The survey instrument assessed emotional, intellectual, and stewardship response measures, as well as climate change response outcomes. Regardless of the artistic program format (live music or poetry), visitors responded favorably to all three of the interpretive outcome domain measures. Statistical comparisons found a number of differences between interpretive outcome measures in regard to motivation and visitor characteristics. By utilizing artistic approaches, this study offers support for the growing body of research about the power of place-based interpretive messaging to engage the public on the issue of climate change.

Keywords
place-based climate change communication, environmental interpretation, artistic interpretive programs, live-music, poetry, interpretive outcomes, Glacier National Park
Introduction
Climate change is considered a major threat to the health of both humans and the planet. Among scientists, there is a virtual consensus that attributes current warming trends to human processes (IPCC, 2007). However, the American public has been shown to be less aware or less concerned about the ongoing process and causes of climate change (Leiserowitz, Maibach, Roser-Renouf, Feinberg, Rosenthal, & Marlon, 2014). Although a majority of the American public believes that climate change is happening (63%), there is a sizable percentage of Americans (23%) that do not (Leiserowitz et al., 2014). Furthermore, only about half (47%) of those who believe global warming is happening believe it is caused mostly by human activities. Additionally, only 22% correctly estimate that over 80% of climate scientists believe that global warming is occurring (Leiserowitz et al., 2014).

Leiserowitz, Maibach, and Roser-Renouf (2009) classified Americans into six different segments that illustrate “a spectrum of concern and action about global warming” (p. 3). The six audiences were: alarmed, concerned, cautious, disengaged, doubtful, and dismissive. Comparing the most recent composition of these segments (Leiserowitz et al., 2014) to the original segments (Leiserowitz et al., 2009), the percentages within the “alarmed” (-2%) and “concerned” (-6%) audiences declined, whereas there have been gains in the “cautious,” (+4%) “doubtful,” (+1%), and “dismissive” (+8%) audiences. Also of note is the dramatic decrease in the “disengaged” (-7%) audience from 2008 to 2014. These comparisons indicate that during this six-year time frame, an increasing number of people are less likely to believe that global warming is occurring and/or be concerned about its effects.

A number of scholars have attempted to understand how people develop their beliefs about climate change. The most common factors identified in the literature include political affiliation (Borick & Rabe, 2010; McCright & Dunlap, 2011; Weber, 2010) and media coverage (Boykoff, 2008; Brulle, Carmichael, & Jenkins, 2012), as well as local and extreme weather variability (Borick & Rabe, 2010; Brulle, Carmichael, & Jenkins, 2012; Li, Johnson, & Zaval, 2011; Weber, 2010). An intriguing factor related to the formation of climate change beliefs is the inclination for people to trust their own personal observations. Borick and Rabe (2010) showed that personal observation was the most important factor contributing to people’s belief or disbelief that temperatures on earth were increasing. Their data showed that, of those who indicated they did not believe in global warming, 42% said that direct personal observations were the primary factor leading them to not believe.

Frantz and Mayer (2009) suggest that because the visibility of climate change impacts is not spread equally throughout the world, its most dramatic impacts might not be readily observable to the broader population. Some of the most striking effects of climate change are seen in the high latitude, high altitude, and polar regions of the planet (Frantz & Mayer, 2009). Indeed, Leiserowitz, and Craciun (2006) found that 71% of Alaskans believed that global warming represented a serious threat while a nation-wide survey found that only 41% of Americans perceived it to be a very serious problem (Pew Research Center, 2009). Moreover, a study at Kenai Fjords National Park in Alaska showed that 88% of visitors stated that they were aware of the decreased size of the park’s glaciers (Brownlee & Hallo, 2012). Conversely, only 36% of South Florida Park and Refuge visitors felt that the impacts of climate change were readily observable in those parks (Beard & Thompson, 2012). The difference between these two study findings (and their locations) indicate that personal observation of the impacts of climate change are easier to experience at a location where the effects of climate change are readily apparent (i.e., the obvious recession of alpine glaciers vs. the more subtle coastal impacts of climate change).

Place-Based Climate Change Communication in Parks and Protected Areas
The impacts of climate change have been extensively documented in diverse habitats from forests (Bonan, 2008) to deserts (Munson et al., 2012) to alpine ecosystems (Dullinger et al., 2012). Considering the aforementioned importance of personal observation and place in the development of climate change beliefs and attitudes, a number of scholars have proposed national parks as an excellent location to communicate the impacts of climate change to the public (Beard, 2012; Beard & Thompson, 2012; Brownlee & Hallo, 2012; Frantz & Mayer, 2009; Schweizer, Davis, & Thompson, 2013; Thompson, Hevel-Mingo, Richman, Carlo, & Kilcullen, 2013). Beard (2012) advised that “studies that assess the influence of directly observing climate change impacts, either in one’s place of residence or an outdoor setting such as a national park, on peoples’ sense of responsibility to take voluntary, mitigating actions would be productive” (p. 55).

Recently, data was collected at 16 different climate-impacted national parks and wildlife refuges in an effort to develop a framework for place-based climate change engagement. Drawing on this large dataset (n = 4,181), Schweizer, Davis, and Thompson (2013) presented evidence to validate a framework to engage visitors in public discourse about climate change impacts. They suggest that the greatest predictor of a visitor’s willingness to change behavior was the individual saliency of climate change. Their findings correspond with the hypothesized power of place to make climate change more personally relevant. The authors encouraged climate change communicators to use place as the medium for the message, connect the place to emotional social messaging, and tailor the messages towards the localized impacts of climate change on that specific place. By focusing climate change messaging on the readily observable impacts of climate change on a particular place, the climate change messaging can become less confrontational and more easily relatable to a broader audience (Schweizer, Davis, & Thompson, 2013; Thompson et al., 2013).

In 2010, the National Park Service formally unveiled the Climate Change Response Strategy (NPS Climate Change Response Program, 2010) to “create interpretive products and programs that educate general audiences about the impacts of climate change...” (Objective 14.2, p. 22). Furthermore, to reach a broader public, the NPS recommended that interpreters utilize creative techniques and engagement strategies to connect national park visitors to the issue of climate change (NPS Climate Change Response Program, 2012). The National Park Service’s initiative to use creative interpretive strategies echoes the thoughts of Weber (2010), who stated, “behavioral research over the past 30 years strongly suggests that attention-catching and emotionally engaging informational interventions may be required to engender the public concern necessary for individual or collective action in response to climate change” (p. 339).

The Potential for Creativity to Communicate Climate Change Interpretive Messages
Innovative interpretive techniques help to make park resources more relevant to the visitor by translating the tangible (the resource) into an intangible (what a resource means) (Brochu & Merriman, 2002; Ham, 1992; Tilden, 1977). Recognizing the need
to remain relevant to its audiences (Larsen, 2005), interpreters use innovative methods and techniques for communicating the significance of park resources to visitors. Artistic approaches to interpretation (poetry, music, visual arts, theater) represent a part of these innovative techniques (Scherbaum, 2006). As Freeman Tilden wrote, “The interpreter must use art, and at best he will be somewhat of a poet” (Tilden, 1977, p. 27). While many artistic approaches to interpretation have long been established within interpretive training and practice (poetry, drama, visual aids), one lesser-used artistic technique with the power to engage with broad audiences is the use of live music.

Several authors have suggested that music could have beneficial application in environmental education/interpretation because it “offers an inherent connection between humans and the natural world” (Turner & Freedman, 2004, p.6). Both authors and trainers of interpretation recognize the power of music as a compliment to other interpretive methods (Brochu & Merriman, 2002; Ham, 1992; Ward & Wilkinson, 2006). In addition, interpretive professionals have anecdotally detailed the effectiveness of using music within their own programs at interpretive workshops hosted by the National Association for Interpretation (Brown, 2007; Werling, 2004).

While some has been written about the use of live music within interpretive programs (Brochu & Merriman, 2002; Ham, 1992; Ward & Wilkinson, 2006) and the potential positives and negatives of entertainment-oriented interpretation, (Knapp & Benton, 2005; Larsen, 2005; Saxe, 2009), little research has been conducted on how the use of live music within interpretive programming impacts interpretive outcomes, particularly those linked to climate change. In other words, little research has been conducted to show the efficacy of artistically oriented interpretive programming in communicating climate change. Additionally, no research to our knowledge has considered the coupled efficacy of artistic and place-based interpretive programming on communicating climate change. With the chief aim of interpretation being the provocation of personal connections to resources (Tilden, 1977), the use of artistic interpretive techniques and the implementation of place-based communication strategies have the potential to transcend the contentiousness that surrounds climate change communication. These approaches might better connect audiences to this issue by evoking powerful emotional, intellectual and stewardship responses.

Purpose Statement

The primary purpose of this study was to examine the effectiveness of an artistic place-based climate change interpretive program on visitors’ on-site intellectual, emotional, and stewardship responses. In addition, this study explored the effectiveness of artistic place-based climate change messaging as received by the visitor and assessed visitors’ perceived level of confrontation with the climate change message. Given that climate change program responses may be influenced by many personal and contextual factors, a secondary purpose of this study was to see if there were any reported differences in the interpretive outcomes based on the program format (music vs. poetry), visitor characteristics (sex, age, and previous attendance to ranger programs), and motivation to attend the program. Utilizing the conceptual basis of place-based climate change communication, this study addressed the following research questions:

1. Is an artistic place-based interpretive program regarding the impact of climate change on Glacier National Park effective in eliciting positive short-term emotional, intellectual, and stewardship responses?

2. Is an artistic place-based interpretive program regarding the impact of climate change on Glacier National Park perceived as non-confrontational?

3. Is there a difference in how visitors responded to an artistic place-based climate change interpretation program based on program format (live music vs. poetry), sex, age, previous park program attendance, or motivation to attend the program?

Methods

Study Setting

The program assessed in this research took place at Glacier National Park in northwest Montana. Glacier National Park (GNP) covers over one million acres of diverse and pristine ecosystems. Rising to the crest of the continental divide, Glacier National Park is a World Heritage Site, a Biosphere Reserve, and, in conjunction with Waterton Lakes National Park in Canada, the world’s first International Peace Park. Every year, nearly two million visitors explore this glacially carved landscape abundant with some of the most recognizable and rare wildlife in North America.

Glacier National Park is commonly recognized as a climate-impacted park. Several investigations have studied Glacier’s changing landscape at the hand of warming temperatures (Hall & Fagre, 2003; Pederson et al., 2010). Climate change at Glacier National Park has been featured in the popular press (Goldstein & Howard, 2013; Nash, 2011) and has been hailed as the “Poster Child for Climate Change” (Ellis, 2010). According to the National Park Service, “perhaps nowhere else in the United States is the evidence for global warming more apparent than in Glacier National Park” (“Ice Patch Archeology,” n.d.).

Program Design

The evaluative focus of this study centered on a 15-minute “Goodbye to Glaciers” place-based climate change interpretive program. The “Goodbye to Glaciers” ranger talk is presented at the Logan Pass Visitor Center located on the continental divide at the apex of the 50-mile Going-to-the-Sun Road. This short interpretive program addressed the effects of global climate change on Glacier’s ecology (specifically the Alpine zone) and highlights the National Park Service’s stance that the current warming trends are largely human-induced (NPS Climate Change Response Program, 2010).

The specific “Goodbye to Glaciers” program examined in this study utilized many tangibles related to Glacier’s resources (mountains, glaciers, mountain goats, pikas, ptarmigans, and alpine vegetation) and connected visitors to many intangibles (i.e., change, loss, renewal, hope, personal responsibility, and the passage of time) to communicate current and potentially future realities of climate change at Glacier National Park. Because the program took place within the alpine region of the park, where the impacts of climate change are readily observable (such as the recession of glaciers, the loss of perennial snowpack, and the “creep” of non-alpine vegetation moving to higher elevation), this setting provided an ideal location to engage in place-based communication about climate change.

The theme of this interpretive program was, “Through their power and their persistence, the glaciers of Glacier National Park have shaped the world around them, but now, our changing world is changing them.” This interpretive program was organized around a traditional triangle-shaped plot diagram. A plot diagram is an
organization tool that is used to map the key events and elements of a story. A traditional plot diagram includes five elements: the exposition, rising action, climax, falling action, and resolution. This particular plot diagram helped to tell Glacier National Park’s story as it relates to climate change:

1. The Exposition: How glaciers carved the landscape of Glacier National Park.
2. Rising Action: How climate is changing on a global scale and is being accelerated by human processes.
4. Falling Action: Playing our part: What we can do to reduce our impact on the planet.
5. Resolution: Summarize the content of the program by singing “I am a Glacier,” or poetically reciting the lyrics.

Note that during the “Resolution” portion of the program, about half of the programs incorporated a musical song titled “I am a Glacier,” which summarized the content of the program. The other half utilized a poetic recitation of the “I am a Glacier” lyrics. This was the only difference in the two approaches to a single artistic place-based climate change interpretive program entitled “Goodbye to Glaciers.” A full description of the program and music/lyrics of the song are available from the corresponding author upon request.

Study Design
This study employed a post-test evaluation of visitor responses to both formats of an artistic place-based climate change interpretive program (e.g., music and poetry). Participation in the study was self-selected, but visitors were assigned to either a live-music or poetry program based on the day the program was presented. Efforts were made to ensure that the live music and poetry programs were nearly identical, with the only exception being the use of melody, harmony, and musical rhythm. This study had unique control over the content and presentation of the programs because the National Park Service interpretive ranger presenting the programs was also the primary investigator of this research. Efforts were made to ensure that both programs were of high quality with consistent content and delivery to avoid creating any bias towards either program.

Data Collection and Measurement
Data collection took place during the summer of 2012. At the conclusion of 28 “Goodbye to Glaciers” artistic place-based climate change interpretive programs, visitors were asked to voluntarily complete a survey to gauge the interpretive outcomes associated with each program. Thirteen live-music programs and 15 poetry programs were delivered. In total, 197 usable surveys were collected including 102 surveys collected from the 340 individuals who attended the live-music programs, and 95 surveys collected from the 436 individuals who attended the poetry programs. This yielded a 30% response rate for music programs, a 22% response rate for poetry programs, and a combined response rate of 25%. These response rates are low for an on-site survey (Vaske, 2008), but can begin to be explained by the transient nature of many audience attendees (many of whom left before or during the survey administration announcement, most likely because of the busy open-air environment in which the program was given), as well as the methodological data collection restrictions imposed to reduce the amount of public burden.

Interpretive response outcome items were adopted from Henker and Brown’s (2011) interpretation evaluation study and have been identified as critical areas for evaluating interpretive programs in Ham and Weiler’s (2006) Interpretation Evaluation Toolkit. These items were grouped into three domains assessing emotional, intellectual, and stewardship responses. For each item, participants were asked to indicate the extent to which they agreed on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

To determine if the individual items statistically loaded upon Henker and Brown’s expected domains, we employed exploratory factor analysis (e.g., principal components analysis). The final rotated factor solution (using Varimax rotation and the Eigenvalue = 1 rule) resulted in two key domains, which were subsequently labeled as provocation/stewardship (six items, Cronbach’s Alpha = .823) to signify the ability of interpretation to provoke interest in resources and reinforce their need for being protected (Tilden, 1977), and emotional response (five items, Cronbach’s Alpha = .779) to exemplify the emotional reactions people often experience as a result of environmental interpretation (Brochu & Merriman, 2002). The face validity of the domains and the individual item loadings were applied as the basis for item classification when cross-loadings occurred. From these new groups, scales were created that became the dependent interpretive outcome domains.

The provocation/stewardship domain contained the items “I will tell a friend or family member something I learned in the program,” “I will change my behavior because of something I learned in the program,” “I am curious to learn more about an idea I heard from the program,” “I feel deeply about the impacts of climate change on Glacier National Park’s resources,” “The information presented in the program was interesting to me,” and “I want to help protect Glacier National Park.”

The emotional response domain contained the items “I smiled or laughed at least once during the program,” “Attending this program made me glad that Glacier National Park is protected,” “Something I heard or saw in the program reminded me of something in my own life,” and “I enjoyed the program I saw.” Additionally, the researcher added one new emotional indicator, “I am awed by the glacial features of Glacier National Park.” This particular “awe” item was added because of its recognition within the interpretive training literature as a desired interpretive outcome (Brochu & Merriman, 2002; Ward & Wilkinson, 2006), but is currently only addressed in a few select interpretive studies (Burbach, Pennisi, West, & Ziegler-Chong, 2012). Also, a sense of awe is often associated with expansive and/or dramatic scenery (such as the landscape at Glacier National Park) that provides a sense of humility and spirituality (Powell, Brownlee, Kellert, & Ham, 2012). Finally, this awe-related item was included to reflect the dramatic glacially carved setting (Logan Pass at Glacier National Park) where the program was delivered.

Thompson et al. (2013) stressed the need to avoid conflict when communicating climate change by strategically focusing the dialogue on the observable impacts at the place where the message is being delivered. Considering this, two pilot climate change response items were created and added to the survey to assess visitor response to climate change interpretation. These items aimed to understand if visitors believed that the topic of human-induced climate change was presented in an effective way and a non-
Table 1. Interpretive outcome domains/item means and percent strongly agree

<table>
<thead>
<tr>
<th>Interpretive Outcome Domains/Items</th>
<th>Mean</th>
<th>% Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provocation/Stewardship*</td>
<td>4.36</td>
<td></td>
</tr>
<tr>
<td>I will tell a friend or family member something I learned in the program.</td>
<td>4.28</td>
<td>46.7</td>
</tr>
<tr>
<td>I will change my behavior because of something I learned in the program.</td>
<td>3.92</td>
<td>32.6</td>
</tr>
<tr>
<td>I am curious to learn more about an idea I heard from the program.</td>
<td>4.10</td>
<td>36.0</td>
</tr>
<tr>
<td>I feel deeply about the impacts of climate change on Glacier National Park resources.</td>
<td>4.64</td>
<td>69.4</td>
</tr>
<tr>
<td>The information presented in the program was interesting to me.</td>
<td>4.59</td>
<td>65.3</td>
</tr>
<tr>
<td>I want to help protect Glacier National Park.</td>
<td>4.59</td>
<td>64.6</td>
</tr>
</tbody>
</table>

**Emotional Response* 
I am awed by the glacial features of Glacier National Park. | 4.84 | 86.6
I smiled or laughed at least once during the program.        | 4.63 | 70.6
Attending the program made me glad that Glacier National Park is protected. | 4.73 | 78.2
Something I heard or saw in the program reminded me of something in my own life. | 4.10 | 37.6
I enjoyed the program I saw.                                   | 4.58 | 62.8

**Climate Change Technique Effectiveness* 
Overall, I believe that the techniques used by the Ranger made the topic of human-induced climate change non-confrontational. | 4.45 | 59.2
Overall, I believe that the techniques used by the Ranger were effective in communicating the effects of human-induced climate change on Glacier National Park. | 4.58 | 65.0

* Measured on a 5 point scale where 1 = strongly disagree to 5 = strongly agree

confrontational way. These items included: “Overall, I believe that the techniques used by the ranger made the topic of human-induced climate change non-confrontational,” and “Overall, I believe that the techniques used by the Ranger were effective in communicating the effects of human-induced climate change on Glacier National Park.” The climate change response items were considered separately and were computed into a two-item index (Cronbach’s Alpha = .836).

Descriptive information about participant demographics (age and sex), prior ranger-led program experience, and motivations for attending the programs were obtained on the questionnaire. Three learning motivation items (“To learn more about Glacier National Park,” “To learn more about glaciers,” “To learn more about climate change”) modified from Henker and Brown (2011) were also measured on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) and computed into a single motivation domain that related to their desire to learn (three items, Cronbach’s Alpha = .738).

**Data Analysis**

Measures of dispersion and central tendency including means, standard deviations, frequencies, and percentages were used to describe the sample and the response to the individual interpretive outcome items in the questionnaire as well as the four dependent response domains. These descriptive statistics were used to examine the effectiveness of artistic place-based climate change interpretive programs producing positive interpretive outcomes within visitors.

To analyze if there were any differences in the interpretive outcomes based on program format, sex, and previous attendance to ranger programs, independent sample t-tests were utilized. To understand if age and motivation had a significant relationship with the interpretive outcomes, correlation analyses were employed. These t-tests and correlation analyses were conducted to address if there was difference in how visitors responded to an artistic place-based environmental interpretation program based on program format (music vs. poetry), age, sex, motivation to learn, and past experience (e.g., previous attendance at ranger programs).

**Results**

Overall, there were 119 females (60%) and 78 males (40%) in the sample. The average age of respondents was 45 years. The 45 to 64 year age range was the most commonly represented age group in the sample (39%). Nearly one quarter (24%) of respondents reported they had previously attended a ranger program at Glacier National Park.

Table 1 presents domains and item-level data to address the first two research questions. When considering both artistic interpretive formats combined (live-music and poetry), all interpretive outcome items were evaluated favorably, with mean scores well above three on a five-point scale. The emotional response domain was the most positive interpretive response with a mean of 4.57 whereas the climate change technique effectiveness domain was the second highest response with a mean of 4.52. Finally, the provocation/stewardship domain was the interpretive outcome with the lowest, but still favorable, response with a mean of 4.36 (Table 1).

Visitor response to individual response items, irrespective of their domain loading, was also assessed and reported (Table 1). Experiencing a sense of awe (e.g., “I am awed by the glacial features of Glacier National Park”) was the highest-rated item at 4.84 and also had the highest percentage of respondents indicating that they strongly agreed with the statement (86.6%; Table 1). Visitors’ intent to change behavior (e.g., “I will change my behavior because of something I learned in the program”) was the lowest-rated item (mean = 3.92) and had the smallest percentage of respondents who strongly agreed with the statement (32.6%; Table 1).
stewardship domain (p-value = .02; Table 2). Females reported a significantly higher provocation/stewardship response than males (means = 4.43 and 4.23, respectively). All other t-test mean comparisons across interpretive outcome domains utilizing sex, program format, and previous attendance to ranger programs as grouping variables were not statistically significant (Table 2).

Table 3 shows the results from correlation analysis. Of particular interest in this analysis was to understand how visitors’ motivation to learn and their demographic characteristics correlated with the interpretive outcome domains (labeled as numbers 1 through 3 in Table 3). Being motivated to learn was positively and significantly (p < .01) correlated with the provocation/stewardship (r = .496), emotional response (r = .406), and climate change technique effectiveness (r = .413) domains (Table 3). The more motivated to learn a visitor was, the higher their provocation/stewardship, emotional, and climate change technique effectiveness response was. Age was modestly though significantly correlated to provocation stewardship (r = .189, p < .01), emotional response (r = .176, p < .05), and climate change technique effectiveness (r = .142, p < .05; Table 3). The older a visitor, the higher their provocation/stewardship, emotional, and climate change technique effectiveness response scores.

Discussion

This study indicated that an artistic place-based climate change interpretive program was associated with favorable short-term emotional, intellectual, and stewardship responses among program attendees. Regardless of the artistic format (e.g., music, poetry) these programs were also perceived as being non-confrontational and effective in communicating the impacts of climate change on Glacier National Park resources. Based on previous research on the potential of National Parks to serve as effective settings to communicate climate change (Beard, 2012; Beard & Thompson, 2012; Brownlee & Hallo, 2012; Frantz & Mayer, 2009; Schweizer, Davis, & Thompson, 2013; Thompson et al., 2013), it is also quite possible that the location where the “Goodbye to Glaciers” program was delivered also played a role in facilitating a positive response to these interpretive outcome items.

Logan Pass is an area where the impacts of climate change on Glacier National Park can be readily observed. Some of these impacts include: the recession and de-classification of glaciers, the decline of average annual snowpack, the movement of non-alpine vegetation to higher elevations, and the opportunity to witness the behavior of climate change sensitive wildlife such as mountains goats, pikas, and ptarmigans. Clearly, Logan Pass is a location where the effects of climate change are readily observable and personally relevant and interpretive programs delivered at this site might amplify these effects. In addition to citing personal relevance as the most important factor in the development of climate change beliefs and attitudes, Borick and Rabe (2010) also found that the “melting of glaciers and polar ice” (p. 796) was the most commonly identified reason why individuals believed that global warming was happening. As such, it is conceivable that interpretive programming at Logan Pass would provide a compelling context/location for effective climate change communication.

Illustrating the effectiveness of this “Goodbye to Glaciers” program is the finding that nine of the thirteen individual items had over half of the respondents strongly agreed with the statements (Table 1). These positive responses indicate that the “Goodbye to Glaciers” program at Logan Pass was very effective in eliciting positive interpretive

Comparison of Interpretive Outcomes across Program Format and Visitor/Visitation Characteristics

To address research question three, t-tests were used to determine potential differences in interpretive outcomes across the independent variables: program format, sex/gender, and previous attendance at ranger programs. In addition, a correlation analysis was carried out to understand the relationship between continuous independent variables (motivations and age) in relation to the interpretive response domains. Table 2 displays the results of the t-test analyses comparing scale means and Table 3 displays the results from the correlation analysis.

From the results of the independent t-test comparisons, the only significant difference occurred between males and females in regards to the provocation/
response to the theme of the “Goodbye to Glaciers” program. Over 69% of visitors strongly agreed that they felt deeply about the impacts of climate change on Glacier National Park resources. Additionally, visitors found this artistic place-based climate change interpretive program to be (1) enjoyable, (2) a reason to smile or laugh, (3) encouraging of awe, (4) interesting, and (5) successful in inspiring visitors to protect the park. Finally, and potentially most importantly, this “Goodbye to Glaciers” program made visitors glad that the park is protected (78% strongly agree). These findings reinforce Frantz and Mayer’s (2009) position that for climate change communication programs to be effective, they must “instill a sense of connection between people and the natural world” (p. 215).

Within the topic of human-induced climate change, behavioral change was an important objective of the “Goodbye to Glaciers” interpretive program (see the description of the program above). However, changes in behavior have long been reported as one of the most difficult outcomes to achieve within interpretation (Cable, Knudson, Udd, & Stewart, 1987; Lee & Moscardo, 2005; Orams, 1997). Though intent to change behavior represented the lowest mean in this study and the lowest number of people reporting that they strongly agreed, our findings did suggest positive short-term intentions to change their behavior as a result of attending this program. The environmentally conscious behaviors discussed in the program included using public transportation (especially at Glacier), reducing their energy consumption, conserving water, and advocating for clean energy initiatives in their communities.

Visitors perceived the topic of human-induced climate change to be presented in both an effective and non-confrontational way. We believe that the artistic elements used within the “Goodbye to Glaciers” program (either live music or poetry) combined with the specific location of the programs were effective elements to appeal to the emotions of visitors and result in a high emotional response score (e.g., 4.57 out of 5). The arts also help to establish commonality with the audience concerning a somewhat controversial topic for Americans (Morris, Davis, & Paglierani, 2009). Given the National Park Service’s commitment to communicating climate change (NPS Climate Change Response Program, 2010), these results seem to indicate that artistic techniques within place-based climate change programming helps elicit a favorable reaction to climate change messaging. Beyond the format of the interpretive program, it is important to note that the location of the “Goodbye to Glaciers” interpretive program, along with the ability to observe the impacts of climate change firsthand, could have also played an integral role in helping to make the topic of human-induced climate change less confrontational and more approachable to park visitors. For example, as Dr. Jessica Thompson and colleagues on the NSF-funded Place-based Climate Change Education Partnership, wrote:

> Messages should emphasize local impacts. Place-based messaging helps avoid personal and political conflicts by keeping the focus on what managers and visitors both agree on: That these places are important and worth caring for. Instead of focusing on the causes of climate change or whether it’s happening, communicate instead about the effects on the park or refuge and its implication for its health. (Thompson et al., 2013, p. 19)

Comparing the Interpretive Outcomes by Format, Motivations, and Demographic Variables

A secondary goal of this research was to compare the interpretive response outcomes across various visitor characteristics, behaviors, program formats, and attendance motivations. Here, findings revealed that visitor responses to the interpretive outcomes were not significantly different across the type of artistic program format (live music vs. poetry). Both types of artistic place-based climate change interpretation formats were equally effective in evoking positive interpretive response outcomes.

Moving beyond program format, a respondent’s sex seems to have only one effect on interpretive response. Females demonstrated a higher level of provocation and stewardship response than males. These findings are supported by research conducted Stern, Powell, Martin, and McLean (2012) who found that females had a statistically significantly higher level of interpretive response than males in regard to all interpretive outcome measures. Although, as Peake, Innes, and Dyer (2009) point out, gender is not generally a robust variable to compare “key processes or outcomes” (p. 110) within interpretive research. More research should be conducted that examines the differences within interpretive response between males and females.

Previous attendance to a ranger program did not make a difference in the level of interpretive response reported by visitors. These findings are at odds with Stern et al. (2012), who found that repeat interpretive program visitors had a statistically significantly higher level of interpretive response. This difference in findings could potentially be attributed to the diversity of programs that Stern et al. (2012) evaluated (a total of 376 unique interpretive programs covering a large variety of topics) compared to the single interpretive program evaluated in this study that focused on the impacts of climate change at Glacier National Park.

The correlation analyses (Table 3) revealed additional insights into the relationship between various motivations and age in relation to interpretive outcome domains. Not surprisingly, those citing learning as a reason to attend the program were also more likely to report favorable interpretive outcomes. These findings reinforce Packer and Ballantyne’s (2002) assertion that being motivated to learn is an important component of successful informal learning. In future studies, a wider range of motivations or experience preferences (Driver, 1983) could be utilized to better understand how various other motivations correspond with interpretive response outcomes. Finally, older visitors responded more favorably toward all interpretive outcome domains. This finding is also substantiated by Stern et al. (2012) who found that older visitors experienced statistically significantly higher levels of interpretive response than younger visitors.

Study Limitations

This on-site program evaluation was subject to a number of limitations that temper our conclusions. These limitations include the use of a self-selected convenience sample, a low response rate, the inability to measure long-term program effects, and the lack of an experimental (randomized) design utilizing pre and post tests with a non-artistic control group. Additionally, three of the interpretive response items did not directly relate to the interpretive program being studied (i.e., “I want to help protect Glacier National Park”). Finally, to more adequately measure the power of place (i.e., Logan Pass) to impact interpretive response, future studies should include a location comparison group (i.e., one less visibly impacted by climate change) wherein responses between the location groups can be compared.
Future studies focusing solely on the efficacy of various artistic interpretive methods should use an experimental design that incorporates pre and post test assessments with a non-artistic control group. Additionally, future studies should employ a follow-up component that gauges the long-term impact of artistic and non-artistic approaches to interpretation (see Knapp & Benton, 2005). Finally, a less iconic study location (such as a local nature center) might better isolate the observable impact of the artistic interpretive methods on reported outcomes.

Conclusion
Personal observation has been shown to be a significant factor in the development of the American public’s climate change beliefs and attitudes (Borick & Rabe, 2010). In addition, artistic approaches to interpretation have long been encouraged within interpretive programming (Tilden, 1977). Therefore, artistic place-based climate change interpretive programming at climate-impacted places, such as national parks, has great potential to increase people’s feelings of personal connection to the issue of climate change (Thompson et al., 2013).

Drawing on the results of this study and previous place-based climate change communication research (Beard, 2012; Beard & Thompson, 2012; Schweizer, Davis, & Thompson, 2013), we encourage parks and protected areas with noticeable/observable climate change impacts to utilize artistic interpretive methods as a means to foster emotional responses to the issue of climate change in a non-confrontational way. Within the context of this study, visitors reported positive provocation/stewardship and emotional outcomes, as well as reporting that an artistic place-based climate change interpretive program was perceived as non-confrontational and effective in communicating the impacts of climate change on Glacier National Park resources.

Considering the magnitude of the threat that climate change poses (IPCC, 2007) and the continued reluctance of the American population to accept their role in this global problem (Leiserowitz et al., 2014), artistic place-based climate change interpretation at climate-impacted national parks is one strategy with the power to connect people’s hearts and minds to the issue of climate change.

References


Perception of Thematic-Based Interpretation at the Jefferson National Expansion Memorial

A Study of Korean Visitors

Mark Morgan
Department of Parks, Recreation, and Tourism
University of Missouri
Columbia, MO 65211
markmorgan@missouri.edu

Geumchan Hwang
School of Kinesiology
University of Minnesota
Minneapolis, MN 55455

Abstract
The Jefferson National Expansion Memorial (Gateway Arch) is a National Park Service (NPS) monument in St. Louis, Missouri, that serves as a symbol of westward expansion and frontier life in America during the 19th century. Most of the nearly 2.5 million annual visitors are interested in learning about its history and significance. Although the Gateway Arch is an international tourism destination, few attempts have addressed the language requirements of foreign visitors. This study evaluated thematic-based interpretation at the Gateway Arch using a sample of Korean visitors. A total of 148 subjects were recruited from the Asian Affairs Center (AAC) at the University of Missouri (MU) and assigned to one of three conditions: control group (n=42), watching a DVD prior to the visit (n=62), or participating in an on-site, ranger-led tour (n=44). Individuals were asked to evaluate five interpretive themes developed by NPS staff (by condition) using a questionnaire that was translated into Korean and checked for accuracy. Results indicated that theme perception was relatively poor in the control group, but improved significantly \((p<0.05)\) after watching a DVD and attending a NPS ranger-led tour. Managerial implications of this study focused on improving visitor experiences for international audiences, especially Koreans.
Keywords
interpretive themes, National Park Service, Jefferson National Expansion Memorial, international audiences, Korean visitors

Introduction
The Jefferson National Expansion Memorial (referred to as the Gateway Arch) is a cultural heritage site managed by the National Park Service (NPS) to commemorate “The vision of Thomas Jefferson for building a unified continental nation and St. Louis’ role as a confluence and gateway in the westward expansion of the United States during the 19th century” (NPS, 2014). The monument is an ideal setting for visitors to experience American history through appreciation of its magnificent architecture. Aside from symbolic meanings, the Gateway Arch also plays an important role in stimulating the local economy since the site attracts nearly 2.5 million visitors annually (Manni, Gramann, Le, & Hollenhorst, 2013). One NPS study (Cook, 2013) found that visitor spending, on average, was $344 inside the park and within 30 miles of its boundaries. This figure translates into over $225 million of visitor spending, including $20.5 million inside the park. A total of $164 million in spending was achieved after removing those in the sample who indicated that the Gateway Arch was not their primary reason for visitation.

Designed to symbolize American culture, “transcending in spiritual and aesthetic values,” the Gateway Arch attracts tourists from around the world (NPS, 2009). Yet, attendance figures are not kept on market segments of the visitor population since the source of information is from turnstile data. One recent NPS study at the Gateway Arch in 2012 found that international tourists made up about 3% of the sample, originating from 18 countries (Manni et al., 2013). Assistance for non-English speaking visitors is limited. A portion of the park website has been translated into Spanish and some bilingual information is available for purchase in the bookstore. Park rangers are of little help to foreign visitors unless they are fluent in English. This situation may yield lower-quality leisure experiences for international tourists and possibly generate less revenue due to poor word-of-mouth communication after park visitation occurs.

The Gateway Arch is a popular tourism destination for visiting scholars and government officials from Asian countries who are affiliated with the University of Missouri (MU). In particular, many Koreans want to learn about cultural and historic attractions in Missouri because of their country’s historic relationship with the United States. The outbreak of warfare on the Korean peninsula in 1950 caused U.S. President Harry S. Truman, a native Missourian, to send military troops into battle against opposition forces. After the Armistice, Korea began an unprecedented recovery with assistance from some of its allies. For example, President Truman made arrangements for Korean government officials to study at MU, tuition-free, through a competitive selection process. For 15 years, many Koreans took advantage of this opportunity and traveled to Missouri in pursuit of higher education (Lindsey, 2011). One byproduct of this experience was learning about U.S. culture and democracy through living in the Midwest. This linkage with Korea was a primary reason for establishing the Asian Affairs Center (AAC) at MU in 1998. Not surprisingly, many Koreans visit the Gateway Arch and other attractions in Missouri on AAC-sponsored tours.

Anecdotal evidence suggests that trips to the Gateway Arch may be nothing more than sightseeing excursions for Asians unless they are fluent in English. Many photographs are taken, but little is known about the educational value of such outings. Other than English, Asians have no source of information to improve their park experience. This situation negatively affects two market segments: Asian visitors and Asian residents (potential tourists). A nearly 60% growth rate in the Asian population has occurred in metropolitan St. Louis during 2000–2012 (Missouri Census Data Center, 2014), a trend that will likely yield increased visitation from this ethnic group. Underutilization of NPS sites by minorities, including Asians, has been discussed in the literature (Floyd, 1999; Taylor, Grandjean, & Gramann, 2011), yet management applications are lacking. This study examined Koreans, one segment of the Asian visitor population in the United States.

Are Korean visitors receiving the intended messages at the Gateway Arch? If not, can their perception of interpretive themes be modified as a result of exposure to a DVD presentation or a ranger-led, guided tour? By studying a sample of Korean visitors at the Gateway Arch, it may be possible to improve their leisure experiences through some simple educational strategies designed to promote understanding. Raising awareness among minorities is a pressing issue for the NPS, but supplying information is of less importance than providing relevant experiences for those who they are hoping to attract (Taylor et al., 2011). Interpretive programming is one way to address this issue, which can be tailored to meet the needs of international visitors.

Literature Review
Heritage and cultural tourism is one of the fastest-growing niche markets in the travel industry (Hargrove, 2002). Part of this growth is due to international tourists because of their interest in history and culture (Huh, 2002). Yet, few studies have been conducted on this travel market in the U.S. One study found differences between the motives of Asian and Caucasian tourists at a cultural attraction in Korea (Lee, 2000), which suggests the phenomenon could occur elsewhere. This finding may have significance for cultural and historic sites in the U.S., such as those administered by the NPS. Despite a growing body of literature on outdoor recreation participation by racial and ethnic groups, there is a dearth of information on minority use of national parks (Floyd, 1999). Some of Floyd’s recommendations include the study of attitudes and behavior about resources, facilities, or programs of minorities at specific locations.

Beerli and Martin (2004) define motivation as “the need that drives an individual to act in a certain way to achieve the desired satisfaction” (p. 626). One explanation for tourism motivations is through “push” and “pull” factors (Dann, 1977). Push is related to the visitors’ motives, such as the need for achievement, fun, or education, whereas the pull factor addresses external aspects including the weather, settings, or culture (Thaophumpitak & Weerakit, 2008). Satisfaction can be defined as a “tourist’s evaluation of the experience” (Fournier, Mick, Wilton, & Peter, 1999) yet visitor satisfaction is more complex than fulfilling needs (Tian-Cole & Crompton, 2003). Morgan and Dong (2006) used the expectancy-disconfirmation theory to evaluate the experiences of train passengers attending NPS-sponsored interpretive programs. Visitor satisfaction is crucial for the tourism industry because attractive and well-attended destinations also stimulate the local economy—an important NPS goal.

According to U.S. Travel Association (2010), in-bound tourism to the U.S. generated $103.1 billion in 2010 (9.8% increase from 2009). Except for 2009, the U.S. Department of Commerce (2009) reported that tourism expenditures have increased every year since 2002 due to the large volume of foreign visitors arriving in the U.S. (from 46.9 million in 2000 to...
Once on-site, visitors are able to obtain information from tour guides and other media associated with visitor satisfaction, similar to the ratings for services or infrastructure. The importance is that people tend to remember themes more than facts (Thorndyke, 1977).

The use and effectiveness of interpretive themes was demonstrated in a study conducted by Tarlton and Ward (2006). A primary reason for importance is that people tend to remember themes more than facts (Thorndyke, 1977). The use and effectiveness of interpretive themes was demonstrated in a study conducted by Tarlton and Ward (2006).

Boniface (2002) sub-divided the meaning of culture into two aspects: tangible, such as buildings, objects and artifacts, and intangible, such as meanings and symbolism. This classification is aligned in part with the NPS definition of interpretation, which includes a hierarchy of tangible resources, intangible meanings, and universal concepts (Larsen, 2003). Themes are the central or key ideas of interpretive programming, in other words, the “take-home” message (Ham, 1992). According to the NPS, interpretive themes are regarded as the most powerful interpretive tool (Larsen, 2003). Themes are conveyed through personal (ranger-led walks and talks) or non-personal approaches (publications, exhibits, or audiovisual presentations) and are regarded as the most powerful interpretive tool (Larsen, 2003). A primary reason for importance is that people tend to remember themes more than facts (Thorndyke, 1977). The use and effectiveness of interpretive themes was demonstrated in a study conducted by Tarlton and Ward (2006).

Many tourists obtain information through personal communication, direct mailings, or the internet prior to their visit (DeLaert, 1999). In fact, destination selection often depends on the availability of such information, most of which is persuasive (Fodness & Murray, 1997). Khaki and Sahaf (2011) showed how tourism information was associated with visitor satisfaction, similar to the ratings for services or infrastructure. Once on-site, visitors are able to obtain information from tour guides and other media outlets, which can have a positive effect on visitor satisfaction. The ultimate purpose of tour guiding is to ensure visitor satisfaction, not merely to provide factual information (Cohen, 1985). McDonnel (2001) studied visitor satisfaction with tour guides in Australia and found that information given by interpreters at places such as historic sites and landmarks was highly rated by visitors. Explanation was a critical component of understanding, which is presumably linked with visitor satisfaction. In short, tour guides can have a positive influence on satisfaction because they provide interesting and useful information to visitors (Ham & Weiler, 2002).

Another way for visitors to obtain site information is through audiovisual presentations. Films and videos are ideally suited for places that attract a high number of visitors, such as cultural and historic sites or monuments (Tsekleves & Cosmas, 2003). Audiovisual information can be effective when the explanations are detailed, complicated, or controversial. In addition, audiovisual information can serve an educational purpose through web-based products or mobile phone applications (Tsekleves & Cosmas, 2003). Unlike information obtained from a tour guide, audiovisual products offer a one-way form of communication. Therefore, quality should be high or else it will be ineffective (Snelsor, 2008).

Effective interpretation produces desired results (Knudson, Cable, & Beck, 2003). Yet, the diversity of outcomes produced by interpretive services, and its relationship to visitor satisfaction, is unclear—even among scholars. Interpretive effectiveness is often equated with principles (Tilden, 1957; Ham, 1992; Beck & Cable, 2011), quality (Ham & Weiler, 2002), meeting expectations (Morgan & Dong, 2006), certification standards (Brochu & Merriman, 2001), or observations from the interpreter (Knapp & Benton, 2004). Audiences can supply managers with information such as, “what they do and what they wish they could do, what they learned and what they’d like to know, how we did as interpreters and how they’d like us to do better” (Knudson et al., 2003). Visitor perception is one way to measure interpretive effectiveness.

**Methods**

**Purpose**

Thematic-based interpretation at the Gateway Arch was evaluated by Korean visitors to determine if their perception of the site could be modified after watching a DVD or attending a ranger-led guided tour, as compared to a control group that received no information.

**Study Site**

The Gateway Arch is a cultural heritage site that commemorates America’s westward expansion and frontier experience during the 19th century. After President Thomas Jefferson acquired over 800,000 square miles of interior land from France in 1803, Meriwether Lewis and William Clark were commissioned to explore this territory known as the Louisiana Purchase. The “Corps of Discovery” lasted nearly two and a half years, starting and ending in St. Louis, Missouri. St. Louis’s strategic location near the confluence of the Mississippi and Missouri Rivers made it a logical hub of exploration, commerce, military activity, cultural awareness, and transportation as America was poised for westward expansion (NPS, 2009).

To honor the expedition and its unique contribution to society, St. Louis, Missouri,
Theme 1: Thomas Jefferson’s vision of the West as a land that would foster and sustain democratic values shaped U.S. policy, including the Louisiana Purchase and the Lewis and Clark Expedition, thus enabling the westward expansion of the 19th century.

Theme 2: The Gateway Arch symbolizes the westward expansion of the 19th century, an unprecedented and rapid migration of people into the trans-Mississippi West which represented hope, opportunity, and promise for some and religious freedom for others, while also causing cultural clashes, environmental destruction, and the taking of land from American Indians.

Theme 3: The design and scale of the Gateway Arch integrated with its setting elevates the timeless form of an arch into a structure that is among the world’s architectural, artistic, and engineering marvels.

Theme 4: The American West is both a symbol and a physical reality that attracts people the world over and continues to shape the national identity.

Theme 5: St. Louis’s strategic location near the confluence of the Mississippi and Missouri Rivers made it a logical hub of exploration, commerce, military activity, cultural encounter, and transportation as the United States expanded westward during the 19th century.

Figure 1. Interpretive themes at the Gateway Arch in St. Louis, Missouri (NPS, 2009).

was chosen as the site for a possible monument. In 1934, Mayor Barney Dickmann formed an exploratory committee to investigate this idea. The city raised funds for the project and initiated a design competition soon after World War II ended. Eero Saarinen from Yale University won the contest, but construction was delayed over a decade due to lack of federal money and difficulties negotiating the removal of railroad trestle along the levee. The project was finally completed in October 1966 (NPS, 2009).

The Gateway Arch is 630 feet (192m) in height, 325 feet higher than the Statue of Liberty and 75 feet higher than the Washington Monument. It is one of the most significant landmarks in the United States, designated as a National Historic Landmark in 1987 (NPS, 2009). Although architecture is the focal point of the monument, visits often include the museum, gift store, theater, and tram (which provide viewing opportunities from its apex).

Questionnaire
A two-page questionnaire was translated into Korean and checked for accuracy by staff members at the Asian Affairs Center to ensure face validity. The survey consisted of one open-ended question, “Was your trip worthwhile?” This item was scored dichotomously (yes or no, followed by two probes: why or why not). It was a “warm-up” question for the study and served as a proxy measure for satisfaction. Next, subjects evaluated a series of statements to measure their perception of NPS interpretive themes. The closed-ended portion of the questionnaire measured each statement using a five-point Likert scale (1=poor to 5=excellent). Afterwards, the five themes were summed and averaged, which served as the dependent variable. The scale was internally consistent, having a reliability coefficient (Cronbach’s alpha) of 0.74. A list of interpretive themes used in this study can be seen in Figure 1 (NPS, 2009).

Experimental Design and Sampling Procedure
A field experiment was employed using a static-group comparison (Shadish & Cook, 2009). The purposive sample consisted of 148 Koreans who voluntarily participated in the study. Intact visitor groups were assigned to one of three conditions: control (n=42), treatment one (n=62), and treatment two (n=44). Data collection occurred from June 2011 to January 2012, contingent upon group availability. During this six-month period, the AAC staff took 15 separate trips to the Gateway Arch (typical group size was about 10 individuals). Outings were mutually exclusive, thus eliminating the possibility of inter-group contamination. No information was given to subjects in the control group, either before, during, or after the tour.

Subjects in the first treatment were asked to watch a commercially available DVD one day before visiting the Gateway Arch. Their visit consisted of a self-guided tour of the museum and a tram ride. Subjects in treatment two took a ranger-led tour at the Gateway Arch, inclusive of the grounds and museum, followed by a tram ride. The guided tour and DVD presentation contained similar, but not identical information. Both of these presentations were delivered in English. Some group members spoke to each other in Korean to facilitate discussion, especially for those having limited English ability. Surveys were answered soon after the site visits were completed.

Limitations
- A static group comparison was used, therefore subjects were not selected or assigned randomly to the three conditions. Field experiments rarely allow such flexibility.
- Koreans on the tours may or may not be representative of those not traveling abroad.
- The education levels and English skills of subjects varied, but were not measured.

Results
A total of 148 government officials and visiting scholars from Korea participated in the field experiment conducted during June 2011 until January 2012 (42 in the control group, 62 in treatment one, and 44 in treatment two). There were no refusals to participate. Regardless of group assignment, most Korean visitors thought the trip was worthwhile because of the beautiful landscape, architecture, and opportunity to learn about United States history and culture. Out of 42 subjects in the control group, 31 (73.8%) thought the trip was worthwhile, followed by 56 out of 62 (90.3%) who watched the DVD, and 44 out of 44 (100%) who took the ranger-led tours, consistent with the respective level of intervention.

Next, subjects were asked to rate their perception of NPS interpretive themes using a five-point scale. Overall perception of the thematic statements (M=2.99, SD=0.79) varied from theme 3 (M=3.64, SD=1.13) to theme 1 (M=2.53, SD=1.05), high to low scores, respectively. Visual inspection of the themes revealed an incremental increase in mean scores from tourists in the control group to those in treatment two. Statements one
through four were significant at the 0.05 alpha level, but theme five failed to reach this threshold. See Table 1.

A one-way analysis of variance tested the main effect: group (the independent variable) against perception (the dependent variable). This relationship was found to be significant ($F(2, 145) = 24.63, p < .001$), having an eta value of 0.504. Post hoc comparisons using the Scheffé multiple range test revealed that each of the groups were mutually exclusive: control ($M = 2.43, SD = 0.85$), treatment one ($M = 3.04, SD = .67$), and treatment two ($M = 3.47, SD = .54$) at the 0.05 alpha level. In other words, the guided tour was better than the DVD and the DVD was better that the control. Furthermore, both treatments out-performed the control group.

### Discussion

Although the Gateway Arch is an international tourism destination, this site has few accommodations for non-English speaking visitors, either before or during their park experience. No translation services are available for Asians, a growing segment of the population in metropolitan St. Louis and likely presence at this site in the near future.

Through qualitative approaches could address this shortcoming, Asians might be reluctant to answer questions from Caucasians unless the interviews are conducted by those who are bilingual. Public surveys are becoming more prevalent across Asia, but this practice is atypical for those originating from non-democratic countries. Regardless, visitor satisfaction is an integral part of NPS culture and on-going efforts should be made to help underserved populations make connections with parks and historic sites in the U.S.

Aside from the educational value, economics is another reason to be concerned about visitor satisfaction. Tourists often discuss their experience with friends or relatives, often using photography to tell their stories. Arguably, the Gateway Arch is one of the more heavily photographed sites in the NPS. Negative word-of-mouth communication may result in fewer and ill-informed visits, coupled with a loss of revenue. Communities benefit from the economic impact associated with tourism and some localities are dependent upon the money generated from this activity, thus achieving an important NPS goal.

### Managerial Implications

Although Asians are an overlooked minority group at the Gateway Arch, some skeptics may question the amount of time and expense required for better service since this group makes up only 4% of the visitor population. Using this rationale, why is it necessary to offer a Spanish translation on the website when only 5% of the park visitors

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**Table 1.** Statistics used to describe the perception of interpretive themes of Korean visitors at the Gateway Arch in St. Louis, Missouri.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>df</th>
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<th>p-value</th>
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<td>1</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>DVD</td>
<td>62</td>
<td>3.06</td>
<td>1.02</td>
<td>2</td>
<td>2.34</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Tour</td>
<td>44</td>
<td>3.18</td>
<td>1.06</td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>148</td>
<td>3.79</td>
<td>1.12</td>
<td></td>
<td></td>
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<tr>
<td>TOTAL</td>
<td>Control</td>
<td>42</td>
<td>2.43</td>
<td>0.86</td>
<td></td>
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<tr>
<td></td>
<td>DVD</td>
<td>62</td>
<td>3.05</td>
<td>0.67</td>
<td>2</td>
<td>24.63</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Tour</td>
<td>44</td>
<td>3.47</td>
<td>0.54</td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>148</td>
<td>2.99</td>
<td>0.79</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
are of Hispanic or Latino origin? The park brochure at Manzanar National Historic Site in Independence, California, is translated into multiple languages, including Japanese and Korean. Asians make up 31% of the visitor population at this site (Littlejohn & Hollenhorst, 2005). Should park policy should be driven by attendance figures, and if so, what is the threshold for action? What will happen at NPS sites by 2040 when major demographic shifts in the U.S. population are expected to occur?

Since Koreans have a historic connection with the state of Missouri this situation represents a missed opportunity, both for the AAC and NPS. Without intervention, the data suggests that Koreans experience nothing more than a sightseeing trip that relies on photography to update social media outlets. Exposure to interpretive programs and services is one way to improve visitor experiences, and consequently, visitor satisfaction. A few simple strategies can be employed to achieve this goal. On the other hand, neglect represents a failure to provide reasonable accommodations for underserved groups.

- The AAC could discuss the Gateway Arch story and show the DVD to participants before the trip.
- The AAC could schedule a ranger-led guided tour in advance to complement information obtained through exposure to the DVD.
- The NPS could translate the Gateway Arch story into Korean and make it available on the website and at the information desk as a free brochure.
- The NPS could develop a language-appropriate headset or phone application so that Koreans can hear the message in their native language, perhaps under contract with a bookstore or concessionaire.

References Cited


Acknowledgements

The authors would like to than the Asian Affairs Center at the University of Missouri for providing subjects, transportation, and logistical support for this study.

TCC 2008
Assessing the Needs of Interpreter Training in Japan

Naoko Yamada
2-12-13 Kamifujimatsu
Mojiku, Kitakyushu 80-0044 Japan
Email: katura3@hotmail.com
Phone: +81-80-4083-5992

Abstract
This research attempted to identify the needs present in interpreter training in Japan. Interviews with trainers and interpreters, and questionnaires administered to interpreters were employed to explore (a) the skills and abilities necessary for successful interpreters and (b) the challenges that trainers may experience regarding interpretive training in Japan. The results showed both consistency and inconsistency in the perceptions of interpreters and trainers. Interpretive design, communication and public speaking, and risk management are core subjects recommended for future introductory-level training programs in Japan. Managerial and training skills are suggested for new types of training programs. Several challenges to interpreter training in Japan were also identified.

Keywords
training, needs, training of trainers, Japan

Background to the Study
Interpreter training is considered to be one of the most influential mechanisms for the improvement of the quality of interpretation (Black & Weiler, 2005; Weiler & Ham, 2001b). In concert with the growth of interpretation over the past few decades in Japan, an increased number of interpreter training courses have been offered by a variety of organizations. As the needs of society and the expected roles of interpreters have changed over the past few decades (Merriman & Brochu, 2006), and the demands and expectations of visitors in the 21st century have grown, the skills and abilities expected of interpreters have also evolved, adding to the needs to be incorporated into guide training (Weiler & Walker, 2014). For example, researchers have only recently begun to investigate the roles
and functions of interpreters as tour guides, a topic rarely treated in the literature prior to the 1990s (e.g., Ballantyne & Hughes, 2001; Black & Weiler, 2005; Ham & Weiler, 2002; Randall & Rollins, 2009; Weiler & Davis, 1993). The training of interpreters must anticipate and reflect the dynamic society in which interpretation takes place. Arguably, enhancing interpreters' abilities to understand their potential multiplicity of roles and functions is one of the most significant values of training and education.

This research attempted to identify the needs of interpreter training from interpreters' and trainers' perspectives in Japan. No research to date has reported the subjects required by interpreters or an assessment of existing training programs in the Japanese context. Research on the training process promises Japanese interpretive trainers both practical guidelines and pedagogical insights into designing effective training.

Previous studies have focused on how interpreters have been trained. Lackey (2008), for example, surveyed the status of academic programs in the USA offering interpretation courses. Her findings revealed several issues that needed to be addressed in future university-based interpretive education programs in that country. While Lackey's results uncovered a number of consistent elements among the programs she surveyed, she also discovered inconsistencies in the skills and subjects taught in interpretation courses. Based on the inconsistencies identified, Lackey suggested consistency across programs and determining core competencies through collaborations among multiple groups. An important benefit of studies such as Lackey's is that they cause self-examination and stimulate ongoing discussions about the competencies required by contemporary interpreters, as well as core curricular components needed by training programs that aim to develop these competencies.

The US-based National Association for Interpretation (NAI, 2009) analyzed the standards and competencies required in contemporary interpretive practice and recommended 12 categories into which the standards and benchmarks for interpretation practice should fall. In addition to interpretive practice, NAI identified the standards necessary for interpretive planning and organization. These standards suggest different stages of competencies for interpretive professionals based on a given trainee's experience skill level and needs. Additionally, according to the US National Park Service’s (n.d.) Interpretive Development Program, training is divided into five levels (entry, developmental, full performance, specialist, and supervisor) and different competencies are identified at each level. These standards suggest that interpreter training should be offered at multiple levels based on specific required skill sets.

Researchers have argued that these competencies and standards ought to be determined based on evidence available in the interpretation literature and in published research results (e.g., Ward & Wilkinson, 2006) and that training components should be determined based on what the literature has revealed with respect to good and best practices (e.g., Weiler & Ham, 2002; Weiler & Walker, 2014). In a study conducted by Black and King (2002) about the effectiveness of tour guide training in Vanuatu, six training programs were evaluated using a qualitative and quantitative survey with trainees. The authors found that the trainees were concerned about having to communicate with tourists who speak different languages as well as about the unreliability of other staff, poor guide performance, threats to visitor safety and lack of first-aid, and tourists’ complaints. Other areas of concern focused on the visitor impacts such as tourists dressing properly and failing to respect local culture and required fees. Black and King also uncovered a number of training needs such as first-aid, guiding skills, handling tourist complaints, language

learning, and basic hospitality. The study underscored the importance of such evaluations toward identifying gaps between what interpretive guides must do and what they currently know. Research of this type must be ongoing in any dynamic profession if it hopes to meet the needs of trainees and maintain high industry standards.

Another study conducted by Weiler and Ham (2002) in Panama, Galapagos Islands, and Argentina offered an example of evaluation research on interpretive tour guides. The authors assessed the training programs in terms of trainees’ reactions and self-assessed learning to evaluate the trainees’ satisfaction with the training as well as the extent to which specific competencies were either learned anew or improved. They measured seven categories of competencies, some of which may illustrate the areas that interpretive guide training, in general, might address: introduction to tourism and the role of the guide, visitor profiles and expectations, the interpretive approach to communication, customer service, leadership and group management, communicating across cultures, and working with tourists who have special needs. In a study of the success of a tour guide organization in Australia, Carmody (2012) reported that increasing the knowledge pertinent to their guiding practices, discussing guiding-related issues, networking, and developing job opportunities were of paramount importance for the member she studied. According to Carmody, supporting knowledge acquisition and networking skills in training may contribute to meeting the needs of trainees. Focusing on the communicative role of tour guides, Weiler and Walker (2014) studied a tour guide training program in Tonga to identify training content and reported the impacts of the program on the trainees’ perceptions. Their findings suggested that programs should include information on visitor expectations, the four domains of experience brokering (i.e., physical, interactive, cognitive, and affective), and the six principles of interpretation (i.e., involving, thematic, relevant, enjoyable/engaging, accurate, and logical) in guide training. According to Weiler and Walker, guide training informed by theory and research can successfully deliver the knowledge and skills required by the guides. Taken together, the above findings help to highlight the advantage of understanding both training needs and trainee satisfaction as input into designing future training courses.

The Current Research

The aim of this paper was to identify and compare the perspectives of interpreters and trainers in Japan with respect to the skills and abilities necessary to become a successful interpreter, and to suggest a framework for interpreter training that accommodates the needs of Japanese interpreters. The research was carried out using three data collection methods: interpreter interviews, trainer interviews, and interpreter questionnaires.

Beginning in winter 2012 and continuing through the beginning of 2013, interviews were conducted with 12 trainers and 12 interpreters. The interviewees were selected using a snowball sampling method through which individuals were required to satisfy the predetermined criteria. Trainers must have engaged in training at least once within the past two years and had more than six years or ten courses of experience as trainers, and interpreters must have participated in training and worked as an interpreter at any time.

The interviews were conducted following a standard protocol involving a couple of orientation questions and several main questions. All of the questions were posed in an open-ended format. Each interview lasted between 30 and 45 minutes. Notes were taken by the researcher during each interview. Following the approaches of Maxwell (1996) and Strauss and Corbin (1998), all of the interviews were transcribed and subjected
Some respondents provided multiple responses.

Table 1. Summary of the participants in the interviews and questionnaires

<table>
<thead>
<tr>
<th>Years of experience</th>
<th>Interviewed trainers</th>
<th>Interviewed interpreters</th>
<th>Questionnaire respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>as a trainer</td>
<td>Frequency (n=12)</td>
<td>Frequency (n=12)</td>
<td>Frequency (n=54)</td>
</tr>
<tr>
<td>5 to 9 years</td>
<td>3</td>
<td>3</td>
<td>26% (14)</td>
</tr>
<tr>
<td>10 to 14 years</td>
<td>5</td>
<td>4</td>
<td>17% (9)</td>
</tr>
<tr>
<td>15 or more years</td>
<td>4</td>
<td>2</td>
<td>13% (7)</td>
</tr>
<tr>
<td>Less than 4 year</td>
<td>1</td>
<td>4</td>
<td>11% (6)</td>
</tr>
<tr>
<td>5 to 9 years</td>
<td>2</td>
<td>5</td>
<td>5% (3)</td>
</tr>
<tr>
<td>10 to 14 years</td>
<td>3</td>
<td>1</td>
<td>2% (1)</td>
</tr>
<tr>
<td>15 or more years</td>
<td>3</td>
<td>2</td>
<td>4% (2)</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>1</td>
<td>2% (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Numbers of training course attended</th>
<th>Frequency (n=54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4 times</td>
<td>5</td>
</tr>
<tr>
<td>5 to 9 times</td>
<td>1</td>
</tr>
<tr>
<td>10 to 15 times</td>
<td>2</td>
</tr>
<tr>
<td>On-the-job and course training</td>
<td>4</td>
</tr>
<tr>
<td>Once</td>
<td>50% (27)</td>
</tr>
<tr>
<td>2 times</td>
<td>15% (8)</td>
</tr>
<tr>
<td>3 to 5 times</td>
<td>22% (12)</td>
</tr>
<tr>
<td>6 or more times</td>
<td>13% (7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency (n=54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>6</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
</tr>
<tr>
<td>Male</td>
<td>52% (28)</td>
</tr>
<tr>
<td>Female</td>
<td>46% (25)</td>
</tr>
<tr>
<td>No mention</td>
<td>2% (1)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Percentage (n=54)</th>
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</thead>
<tbody>
<tr>
<td>20s</td>
<td>20% (11)</td>
</tr>
<tr>
<td>30s</td>
<td>39% (21)</td>
</tr>
<tr>
<td>40s</td>
<td>28% (15)</td>
</tr>
<tr>
<td>50s</td>
<td>13% (7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Work setting</th>
<th>Frequency (n=54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental education and nature experience organization</td>
<td>10</td>
</tr>
<tr>
<td>Aquarium</td>
<td>1</td>
</tr>
<tr>
<td>University</td>
<td>1</td>
</tr>
<tr>
<td>Nature experience center</td>
<td>9</td>
</tr>
<tr>
<td>Environmental learning center</td>
<td>2</td>
</tr>
<tr>
<td>Science learning center</td>
<td>1</td>
</tr>
<tr>
<td>Zoo or aquarium</td>
<td>5% (3)</td>
</tr>
<tr>
<td>Museum</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Other than above including not interpretive settings</td>
<td>48% (26)</td>
</tr>
</tbody>
</table>

1 Some respondents provided multiple responses. to content analysis to identify categories in relatively short answer responses. Open coding was used to break the texts into discrete elements to examine the similarities and differences and identify recurring themes and concepts. The identified categories and themes were later reexamined for coding checks and adequate agreements between the data and codes. The derived categories and subcategories served as items in an instrument that would be used in the subsequent survey. As such, a questionnaire was developed.

In the spring of 2013, the questionnaires were administered to a purposive sample of interpreters known to have completed at least one previous training course. With the help of three organizations that offer interpreter training, an email invitation letter was sent through mailing lists to approximately 500 past training participants (i.e., trainees) requesting they complete the questionnaire. Two weeks after the first invitation email, another email was sent to the mailing lists to remind the readers about and encourage survey participation. Out of the trainees approached, 54 individuals returned completed questionnaires in one month. This small number of respondents was not representative of all of the training participants and, as such, is a limitation of the research. The main cause of the non-completion was conceivably due to the degree of involvement in interpretation by the trainees because the trainees included individuals with little or no interpretation experiences and/or intention to work as an interpreter. The trainees were registered on the mailing lists simply because they had completed training courses. This situation illustrated a unique aspect of interpreter training in Japan, which will be discussed shortly. The respondents were not randomly selected, but voluntarily self-selected from a select list of interpreter trainees. To reduce these limitations, the results derived from the trainer interviews, interpreter interviews, and interpreter questionnaires were compared for agreement and disagreement. Following the reasoning of Maxwell (1996), the collection of both qualitative and quantitative data allowed for triangulation of the data and increased the credibility and trustworthiness of the researcher’s interpretations.

Results and Discussion

A brief description of the research participants was presented in Table 1. The trainer interview participants varied in regard to their years of experience as interpreters: three respondents had worked for less than nine years, three for 10 to 14 years, and five for 15 or more years. One respondent had no experience as an interpreter. Their experiences as trainers also varied from five years to more than 15 years. All but one were men.

The interpreter interview participants varied in regard to their years in the field. Seven of them had less than nine years of experiences, two had 10 to 14 years, and three had 15 or more years. Six of the participants had attended nine or fewer previous training programs, two had attended more than ten, and four had attended on-the-job training and some training courses. Half of the respondents were women.

Out of the 54 questionnaire respondents, half had attended a training course once. Over 70% of the respondents had experience as a full-time, part-time, or volunteer interpreter. The respondents worked for nature experience centers (31%) and environmental learning centers (22%), while close to half of them worked at other settings (48%). (Some individuals worked for multiple settings and, thus, the sum of these numbers exceeds 100%.) Their ages varied from the 20s (20%), 30s (39%), 40s (28%), to 50s (13%). Slightly more than one-half were men.
Useful knowledge and skills learned in past training courses

The interpreters were asked in interviews to describe the most useful skills and knowledge that they felt they had learned in their previous training. This question was aimed at identifying the subjects that should be included in future training courses and asked only to the interpreters. The responses varied and fell into the following categories: designing and delivering interpretation (n=6), hospitality (n=5), communication skills (n=5), public speaking (n=5), risk management (n=5), the importance of research (n=5), the purpose of interpretation (n=5), and knowledge of interpretive resources (n=5).

The interpreters were also asked to outline the skills and knowledge that they perceived as having been overlooked or insufficiently taught in their prior training courses. This question attempted to explore whether past training courses matched the respondents’ needs and desires. A wide variety of responses were given: designing interpretation (n=5), risk management (n=5), practicing individual skills (n=5), experiencing a variety of interpretive programs (n=5), on-the-job training (n=5), a scientific view of interpretive resources (n=5), the purpose of interpretation (n=5), and nothing (n=5). The responses provided by the trainers and interpreters served as items for another question in the questionnaire.

The interpreters were requested to list what skills and knowledge they would like to learn in future training courses. The responses fell into the following categories: communication skills (n=7), training of interpreters (n=7), entertainment (n=7), interpretive design (n=7), and others (e.g., communication, the principles of interpretation, hospitality and service, relevant theories, management, interpretive planning, knowledge of audience, and language skills, n=1 respectively).

The trainers were also asked to list the subject areas they taught in their training courses. Several similar responses emerged: communication skills (n=7), training of trainers (n=7), advanced interpretation skills (n=7), planning of interpretive projects and events, training interpreters, management of interpretation-related works, and public relations of interpretation.

Table 2 shows the responses derived from the three groups of samples. Some areas were consistently reported as useful: concepts of interpretation, designing interpretation, delivering interpretation, communicating and speaking to audiences, understanding and analyzing myself, and risk management. For example, “I learned not to speak too much, not to give too much information but to provide visitors with experiences and wait for them to think and respond. That point has been very useful.” Another interpreter stated, “Risk management - anticipating any risks is indispensable. We can offer interpretation only after the safety and anxiety of audience are taken care of.”

Skills and knowledge desired to learn in future training courses

The trainers were asked to describe any new subjects that they felt should be taught in future training courses. The responses fell into the following categories: the management aspects of interpretation (n=7), communication skills (n=4), training of trainers (n=4), advanced interpretation skills (n=3), designing interpretation (n=1), and knowledge of the resource to be interpreted (n=1). The trainers also mentioned the following formats of training as necessary in future: on-the-job training (n=4), advanced levels of courses (n=4), on-site training (n=2), and corresponding learning (n=2). They were also asked to state what they would like to learn about or improve upon as interpreters if given such opportunities. They offered various responses: knowledge or experiences of the resources to be interpreted (n=3), training of interpreters (n=3), entertainment (n=3), interpretive design (n=2), and others (e.g., communication, the principles of interpretation, hospitality and service, relevant theories, management, interpretive planning, knowledge of audience, and language skills, n=1 respectively).

The interpreters were requested to list what skills and knowledge they would like to learn in the future. This question aimed to examine whether the trainers’ perceptions were consistent with the interpreters’ in regard to the areas that should be addressed in future training courses. Several similar responses emerged: communication skills (n=6), designing interpretation (n=6), knowledge of the resources to be interpreted (n=5), risk management (n=5), management (n=5), internal training (n=5), and language skills (n=5).

Useful knowledge and skills learned in past training courses

Table 2. Useful skills and knowledge learned in past training courses

<table>
<thead>
<tr>
<th>Useful skills and knowledge</th>
<th>Interviews</th>
<th>Questionnaires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concepts of interpretation</td>
<td>4.69</td>
<td>0.64</td>
</tr>
<tr>
<td>Example interpretation performed by trainers</td>
<td>4.52</td>
<td>0.57</td>
</tr>
<tr>
<td>Interpretive design</td>
<td>4.43</td>
<td>0.63</td>
</tr>
<tr>
<td>How to conduct and deliver interpretation</td>
<td>4.35</td>
<td>0.78</td>
</tr>
<tr>
<td>How to communicate and speak to audience</td>
<td>4.19</td>
<td>0.95</td>
</tr>
<tr>
<td>Understanding and analyzing myself</td>
<td>4.17</td>
<td>0.95</td>
</tr>
<tr>
<td>Risk management</td>
<td>4.02</td>
<td>1.14</td>
</tr>
<tr>
<td>Vocalization</td>
<td>3.96</td>
<td>1.28</td>
</tr>
<tr>
<td>Experiential learning</td>
<td>3.96</td>
<td>0.97</td>
</tr>
<tr>
<td>Facilitation</td>
<td>3.85</td>
<td>1.27</td>
</tr>
<tr>
<td>Knowledge of the resource to be presented</td>
<td>3.83</td>
<td>1.08</td>
</tr>
<tr>
<td>Hospitality</td>
<td>3.81</td>
<td>1.24</td>
</tr>
<tr>
<td>How to use props</td>
<td>3.80</td>
<td>1.10</td>
</tr>
<tr>
<td>Practicing interpretation</td>
<td>3.74</td>
<td>0.77</td>
</tr>
<tr>
<td>Communication</td>
<td>3.70</td>
<td>0.95</td>
</tr>
<tr>
<td>Understanding the audience</td>
<td>3.67</td>
<td>1.13</td>
</tr>
<tr>
<td>Leadership</td>
<td>3.67</td>
<td>1.24</td>
</tr>
<tr>
<td>Service manners and behaviors</td>
<td>3.54</td>
<td>1.28</td>
</tr>
<tr>
<td>Planning interpretive projects and events</td>
<td>3.48</td>
<td>1.25</td>
</tr>
<tr>
<td>Training interpreters</td>
<td>3.20</td>
<td>1.38</td>
</tr>
<tr>
<td>Management of interpretation related works</td>
<td>3.07</td>
<td>1.29</td>
</tr>
<tr>
<td>Public relations of interpretation</td>
<td>3.06</td>
<td>1.33</td>
</tr>
</tbody>
</table>

1 Trainers were asked to list the subject areas they taught in their training courses.
2 Scale of 5 to 1, where 5=very useful, 3=neutral, and 1=not at all useful.

The results indicated that interpreters found the skills and knowledge of the resource to be interpreted (\(X=4.69\)), example interpretation performed by trainers (\(X=4.52\)), how to design interpretation (\(X=4.43\)), and how to conduct and deliver interpretation (\(X=4.35\)). On the other hand, managerial aspects scored relatively low (\(X < 3.5\): planning of interpretive projects and events, training interpreters, management of interpretation-related works, and public relations of interpretation).

Table 2 shows the responses derived from the three groups of samples. Some areas were consistently reported as useful: concepts of interpretation, designing interpretation, delivering interpretation, communicating and speaking to audiences, understanding and analyzing myself, and risk management. For example, “I learned not to speak too much, not to give too much information but to provide visitors with experiences and wait for them to think and respond. That point has been very useful.” Another interpreter stated, “Risk management - anticipating any risks is indispensable. We can offer interpretation only after the safety and anxiety of audience are taken care of.”

Skills and knowledge desired to learn in future training courses

The trainers were asked to describe any new subjects that they felt should be taught in future training courses. The responses fell into the following categories: the management aspects of interpretation (n=7), communication skills (n=4), training of trainers (n=4), advanced interpretation skills (n=3), designing interpretation (n=1), and knowledge of the resource to be interpreted (n=1). The trainers also mentioned the following formats of training as necessary in future: on-the-job training (n=4), advanced levels of courses (n=4), on-site training (n=2), and corresponding learning (n=2). They were also asked to state what they would like to learn about or improve upon as interpreters if given such opportunities. They offered various responses: knowledge or experiences of the resources to be interpreted (n=3), training of interpreters (n=3), entertainment (n=3), interpretive design (n=2), and others (e.g., communication, the principles of interpretation, hospitality and service, relevant theories, management, interpretive planning, knowledge of audience, and language skills, n=1 respectively).

The interpreters were requested to list what skills and knowledge they would like to learn in the future. This question aimed to examine whether the trainers’ perceptions were consistent with the interpreters’ in regard to the areas that should be addressed in future training courses. Several similar responses emerged: communication skills (n=6), designing interpretation (n=6), knowledge of the resources to be interpreted (n=5), risk management (n=5), management (n=5), internal training (n=5), and language skills (n=5).

The interpreters were also asked to outline the skills and knowledge that they perceived as having been overlooked or insufficiently taught in their prior training courses. This question attempted to explore whether past training courses matched the respondents’ needs and desires. A wide variety of responses were given: designing interpretation (n=3), risk management (n=3), practicing individual skills (n=3), experiencing a variety of interpretive programs (n=2), on-the-job training (n=2), a scientific view of interpretive resources (n=1), the purpose of interpretation (n=1), and nothing (n=1). The responses provided by the trainers and interpreters served as items for another question in the questionnaire.

In the questionnaire, the respondents were asked to rate the skills, knowledge areas, and subjects that they would like to learn about in future training courses as well as how they would like to learn this information. A five-point scale was used, ranging from “want to learn very much” (5) to “do not want to learn at all” (1). Of the 23 items,
Communication skills, such as understanding the audience (4.55), were likewise highly rated. How to communicate and speak to the audience (4.55) were also highly sought. Skills used to design guided walks and talks (4.57) and non-personal interpretation (4.57) and non-personal interpretation (4.57) were also rated as highly important.

Skills, knowledge, and subjects

<table>
<thead>
<tr>
<th>Skills, knowledge, and subjects</th>
<th>Interviews</th>
<th>Interpreters</th>
<th>Mean1</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of interpretation-related works</td>
<td>✔</td>
<td>✔</td>
<td>4.70</td>
<td>0.76</td>
</tr>
<tr>
<td>Planning of interpretive projects and events</td>
<td>✔</td>
<td>✔</td>
<td>4.70</td>
<td>0.60</td>
</tr>
<tr>
<td>Understanding the audience</td>
<td>✔</td>
<td>✔</td>
<td>4.67</td>
<td>0.55</td>
</tr>
<tr>
<td>Interpersonal relations</td>
<td>✔</td>
<td>✔</td>
<td>4.65</td>
<td>0.62</td>
</tr>
<tr>
<td>How to communicate and speak to audience</td>
<td>✔</td>
<td>✔</td>
<td>4.61</td>
<td>0.71</td>
</tr>
<tr>
<td>Public relations of interpretation</td>
<td>✔</td>
<td>✔</td>
<td>4.59</td>
<td>0.69</td>
</tr>
<tr>
<td>Design of guided walks and talks</td>
<td>✔</td>
<td>✔</td>
<td>4.57</td>
<td>0.62</td>
</tr>
<tr>
<td>Evaluations of interpretation</td>
<td>✔</td>
<td>✔</td>
<td>4.57</td>
<td>0.72</td>
</tr>
<tr>
<td>Facilitation</td>
<td>✔</td>
<td>✔</td>
<td>4.56</td>
<td>0.84</td>
</tr>
<tr>
<td>Non-personal interpretation</td>
<td>✔</td>
<td>✔</td>
<td>4.52</td>
<td>0.75</td>
</tr>
<tr>
<td>Interpretive planning</td>
<td>✔</td>
<td>✔</td>
<td>4.48</td>
<td>0.77</td>
</tr>
<tr>
<td>Risk management</td>
<td>✔</td>
<td>✔</td>
<td>4.44</td>
<td>0.66</td>
</tr>
<tr>
<td>Design of interpretation other than guided walks and talks</td>
<td>✔</td>
<td>✔</td>
<td>4.43</td>
<td>0.79</td>
</tr>
<tr>
<td>Hospitality and services</td>
<td>✔</td>
<td>✔</td>
<td>4.43</td>
<td>0.72</td>
</tr>
<tr>
<td>Entertainment</td>
<td>✔</td>
<td>✔</td>
<td>4.37</td>
<td>0.85</td>
</tr>
<tr>
<td>Leadership</td>
<td>✔</td>
<td>✔</td>
<td>4.35</td>
<td>0.70</td>
</tr>
<tr>
<td>How to use props</td>
<td>✔</td>
<td>✔</td>
<td>4.33</td>
<td>0.85</td>
</tr>
<tr>
<td>Work ethic</td>
<td>✔</td>
<td>✔</td>
<td>4.26</td>
<td>0.89</td>
</tr>
<tr>
<td>Training of interpreters</td>
<td>✔</td>
<td>✔</td>
<td>4.24</td>
<td>0.85</td>
</tr>
<tr>
<td>Learning theories</td>
<td>✔</td>
<td>✔</td>
<td>4.17</td>
<td>0.82</td>
</tr>
<tr>
<td>Product knowledge</td>
<td>✔</td>
<td>✔</td>
<td>4.15</td>
<td>1.11</td>
</tr>
<tr>
<td>Interpretation in a different language</td>
<td>✔</td>
<td>✔</td>
<td>3.94</td>
<td>1.11</td>
</tr>
<tr>
<td>Examples of interpretation</td>
<td>✔</td>
<td>✔</td>
<td>3.54</td>
<td>0.86</td>
</tr>
</tbody>
</table>

1 Scale of 5 to 1, where 5=want to learn very much, 3=don’t know, and 1=don’t want to learn at all.

Table 4. Desired training format in future training programs

<table>
<thead>
<tr>
<th>Training formats</th>
<th>Interviews</th>
<th>Interpreters</th>
<th>Mean1</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-site training</td>
<td>✔</td>
<td>✔</td>
<td>4.48</td>
<td>0.67</td>
</tr>
<tr>
<td>Practical designing and delivering interpretation</td>
<td>✔</td>
<td>✔</td>
<td>4.46</td>
<td>0.82</td>
</tr>
<tr>
<td>Receiving feedback on one’s performance</td>
<td>✔</td>
<td>✔</td>
<td>4.39</td>
<td>0.77</td>
</tr>
<tr>
<td>On-the-job training</td>
<td>✔</td>
<td>✔</td>
<td>4.22</td>
<td>0.98</td>
</tr>
<tr>
<td>Video and corresponding materials</td>
<td>✔</td>
<td>✔</td>
<td>3.26</td>
<td>1.18</td>
</tr>
<tr>
<td>Distance learning</td>
<td>✔</td>
<td>✔</td>
<td>2.93</td>
<td>1.03</td>
</tr>
</tbody>
</table>

1 Trainers listed necessary format of training.

2 Scale of 5 to 1, where 5=want to learn very much, 3=don’t know, and 1=don’t want to learn at all.

The interpreters were asked to describe any interpretation-related issues or problems that they had encountered in their workplaces. Their responses varied as shown in the

21 received mean ratings of greater than 4.0, indicating substantial interest (Table 3). Management of interpretation-related works (4.7) and planning of interpretive projects and events (4.7) scored the most favorably, which potentially indicated the high priority of having managerial skills taught in future courses. This potential is underscored by the similarly high ratings received by public relations (4.59) and program evaluation (4.57). Communication skills, such as understanding the audience (4.66), interpersonal relationships (4.64), how to communicate and speak to the audience (4.61), and facilitation (4.55), were likewise highly rated. Skills used to design guided walks and talks (4.57) and non-personal interpretation (4.51) were also highly sought.

The respondents also rated their interests in various training formats for future courses (Table 4). They were most interested in on-site training (4.48), followed by practical designing and delivering interpretation (4.46), receiving feedback on one’s performance (4.38), and on-the-job training (4.22). They were primarily interested in face-to-face learning as opposed to vicarious alternatives such as distance learning (2.92) or video and correspondence educational materials (3.25).

Tables 3 and 4 present the responses derived from all three groups of respondents. Several responses were consistently reported as desirable among the three samples: managerial skills, communication skills, interpretive design, knowledge of the resources to be interpreted (often called “product knowledge”), and training skills. For example, “I want to learn how to design program that engages people - that can attract and hold people’s attentions,” one interpreter said. Another example on training skills included: “I want to learn about training of interpreters and see how others train interpreters at other sites,” mentioned by a trainer, while “I want to learn about internal (on-the-job) training to train others. By showing my interpretation, I teach others and myself,” described by an interpreter. Inconsistencies, however, were also identified. While currently offered in some training courses, interpretive design, practicing individual skills, and risk management were perceived by interpreters to be lacked, and they expressed a desire to learn or spend time more about these areas in the future. According to one interpreter, “I wanted to practice my skills and know how well I can perform them. There were few opportunities for each of us to practice and perform in the training.” Contrary to the trainers’ suggestions, the interpreters preferred receiving training on their performances to distance or correspondence means of learning.

Problems and challenges that interpreters face in their workplaces that may have implications for future training

The trainers were asked to describe the main concerns or problems that interpreters experienced while doing their work. This question was aimed at revealing subjects that could be addressed in future training courses to help interpreters better cope with the issues identified. Diverse responses were obtained and grouped into the following categories: not understanding their role in overall management (n=5), insufficient social recognition of interpretive profession (n=3), being more informational than interpretive (n=3), a lack of experiencing interpretation in other places (n=2), a lack of internal training (n=2), a lack of opportunities to perform interpretation (n=1), and the lack of an established training system (n=1).

The interpreters were asked to describe any interpretation-related issues or problems that they had encountered in their workplaces. Their responses varied as shown in the
The five-point scale for this question ranged from “very problematic” (5) to “not at all problematic” (1). Table 5 shows the responses derived from all three groups of research participants. A problem consistently reported by the three groups was insufficient social recognition of interpretive profession. According to one trainer, “Almost no one knows the word of interpretation here. Interpreter hasn’t yet become a profession here. Interpreter and interpretation haven’t been recognized yet.” One interpreter was disappointed at the climate in which “people around here don’t pay money for interpretation to experience nature.” Another consistent response was a lack of experience other interpretation or interactions with interpreters at other places. “When there are restrictions in conducting interpretation, I think a lot, try to get a solution for it, but often can’t come up with a good idea because I’m working alone,” one interpreter said. One trainer pointed out, “Those interpreters don’t get experiences outside of their sites. Because they don’t see better interpretation, their interpretation isn’t improved or stays the same.” Inconsistency was also found. Insufficient evaluations of the effects of interpretation was reported as problematic only by the interpreters. One interpreter stated, “I don’t know how to evaluate the effects of my interpretation. I tried but didn’t know how to measure them, so I haven’t evaluated. I can’t know how my audiences have changed after my program.”

**Useful academic subjects and experiences for interpreters to have**

Interpretation has not been a subject of formal education in Japan. Considering that only a few courses are available for students, the respondents were asked to list any academic subjects and experiences that they think are most useful in regard to becoming a successful interpreter. A variety of responses were listed by the trainers, including communication (n=2), the Japanese language (n=2), visual arts (n=3), the science behind the interpretive resources (e.g., ecology, biology, environmental sciences, and history, n=5), psychology (n=2), moral education (n=2), and hospitality (n=2).

The interpreters were asked to describe useful subjects they learned about outside of their training courses. Their responses were grouped into four categories: nature experiences (n=4), on-the-job experiences (n=4), musical performance and arts (n=2), and others (e.g., business, outdoor experiences, computer skills, and language skills, n=1 respectively). The interpreters were also asked to list skills and knowledge necessary for successfully conducting interpretation. Similar views were reported and grouped into the following categories: product knowledge (n=7), psychology and understanding of the audience (n=5), communication skills (n=5), first-hand experiences with the interpretive resources (n=5), and interpretive design skills (n=2).

In the questionnaire, the respondents were asked in an open-ended format to list up to five academic subjects and experiences that they considered most useful in regard to becoming a successful interpreter. Their responses were grouped into five categories: product knowledge, interpretive skills, understanding of audiences, supplemental skills,

<table>
<thead>
<tr>
<th>Problems encountered while working as an interpreter</th>
<th>Interviews</th>
<th>Questionnaires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient evaluations of the effects of interpretation</td>
<td>✓</td>
<td>4.11 ± 1.05</td>
</tr>
<tr>
<td>A lack of skills of public relations of interpretation</td>
<td>✓</td>
<td>4.11 ± 1.03</td>
</tr>
<tr>
<td>A lack of experiencing interpretation at other places</td>
<td>✓ ✓</td>
<td>3.97 ± 0.94</td>
</tr>
<tr>
<td>A lack of skills of planning interpretive projects/events</td>
<td>✓</td>
<td>3.95 ± 1.08</td>
</tr>
<tr>
<td>A lack of skills of managing interpretation-related works</td>
<td>✓ ✓</td>
<td>3.92 ± 1.33</td>
</tr>
<tr>
<td>Little social recognition of interpretive profession</td>
<td>✓ ✓</td>
<td>3.87 ± 1.13</td>
</tr>
<tr>
<td>A lack of interactions with interpreters at other sites</td>
<td>✓ ✓</td>
<td>3.84 ± 1.04</td>
</tr>
<tr>
<td>A lack of research on the resources to be interpreted</td>
<td>✓</td>
<td>3.61 ± 1.17</td>
</tr>
<tr>
<td>Insufficient on-the-job training</td>
<td>✓</td>
<td>3.61 ± 1.32</td>
</tr>
<tr>
<td>A lack of feedback from coworkers and supervisors</td>
<td>✓ ✓</td>
<td>3.47 ± 1.33</td>
</tr>
<tr>
<td>A lack of interpretation skills</td>
<td>✓</td>
<td>3.45 ± 1.20</td>
</tr>
<tr>
<td>A lack of skills of evaluating interpretation</td>
<td>✓</td>
<td>3.42 ± 1.04</td>
</tr>
<tr>
<td>A lack of first-hand experiences of interpretive resources</td>
<td>✓</td>
<td>3.34 ± 1.17</td>
</tr>
<tr>
<td>A lack of attractive, role-model interpreters</td>
<td>✓</td>
<td>3.26 ± 1.38</td>
</tr>
<tr>
<td>An insufficient shared understanding with the managers</td>
<td>✓</td>
<td>3.16 ± 1.55</td>
</tr>
<tr>
<td>Not knowing many kinds of “pre-designed” interpretation</td>
<td>✓</td>
<td>3.03 ± 1.26</td>
</tr>
<tr>
<td>A lack of opportunity to practice</td>
<td>✓</td>
<td>3.00 ± 1.33</td>
</tr>
<tr>
<td>A lack of work opportunities</td>
<td>✓</td>
<td>3.00 ± 1.46</td>
</tr>
<tr>
<td>Insufficient understanding of interpretation</td>
<td>✓ ✓</td>
<td>2.92 ± 1.23</td>
</tr>
<tr>
<td>Not knowing how to design activities</td>
<td>✓</td>
<td>2.79 ± 1.26</td>
</tr>
<tr>
<td>Difficulty of maintaining my sense of wonder</td>
<td>✓ ✓</td>
<td>2.66 ± 1.12</td>
</tr>
<tr>
<td>Not knowing how to speak and deliver for different types of audiences</td>
<td>✓</td>
<td>2.63 ± 1.30</td>
</tr>
<tr>
<td>Not knowing how to speak to the audiences</td>
<td>✓</td>
<td>2.58 ± 1.13</td>
</tr>
<tr>
<td>Not remember any problems</td>
<td>✓</td>
<td>1.47 ± 1.60</td>
</tr>
</tbody>
</table>

1 Scale of 5 to 1, where 5=very problematic, 3=don’t know, and 1=not at all problematic.
Table 6. Academic subjects and experiences important to becoming an interpreter

<table>
<thead>
<tr>
<th>Subjects and experiences</th>
<th>Interviews</th>
<th>Questionnaires</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trainers</td>
<td>Interpreters</td>
</tr>
<tr>
<td><strong>Product knowledge</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature experiences (including outdoor experiences)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Natural sciences (e.g., biology, ecology, sciences)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Curiosity/sensitivity about resources</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Knowledge/expertise in regard to resources</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>History and culture</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Research skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interpretive skills</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Interpretive techniques and experiences</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Public speaking</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Japanese</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Facilitation skills</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Hospitality</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Understanding of audience</strong></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supplemental skills</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managerial skills</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Risk management</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Problem solving and critical thinking</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Morals/ethics</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Physical education</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Note: n=54. Multiple responses exceed the total percentage of 100 since respondents could mention more than one category.

and miscellaneous (Table 6). The results indicated that respondents especially valued product knowledge. Around 40% of the respondents reported that nature experiences and natural sciences were important in regard to becoming an interpreter. Most of the respondents worked at nature experience or environmental learning facilities and, therefore, were likely to view nature experiences and natural sciences as important subjects. Close to 40% of the respondents reported that communication was important, while 20% considered arts to be important.

Table 6 illustrates the responses derived from the three groups of respondents. Similar views were reported across the three groups: natural sciences, communication, arts, Japanese language, psychology, and hospitality. These findings are similar to those findings in Lackey’s (2008) study in regard to communication skills, arts in interpretation, and learning and communication theories, and are consistent with the views about professional development advocated by other authors (Ham, 2013; Ward & Wilkinson, 2006; Weiler & Ham, 2002).

Table 7. Trainees’ perceptions of important areas of knowledge and skills for interpreters/tour guides

<table>
<thead>
<tr>
<th>Areas of knowledge and skills</th>
<th>Ballantyne &amp; Hughes (2001)1</th>
<th>Black &amp; King (2002)2</th>
<th>Weiler &amp; Walker (2014)3</th>
<th>This research (2014)4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product knowledge</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Safety/risk management</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Communication/speaking skills</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Audience knowledge</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Interpretation skills</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Enhancing audience experience</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Regulations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stimulating visitor interests</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Minimal impact techniques</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language skills</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Complaint handling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better tour handling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Tour guides were asked about their most important functions.
2 Tour guides were asked about their aspirations.
3 Tour guides were asked about the most important things for guides to do in their job.
4 Trainees (interpreters) were asked about useful and necessary subjects, skills, and knowledge for successful interpreters.

Interpretation is a fairly new subject to higher education institutions in Japan and only a limited number of universities offer interpretation courses. It is suggested that individuals who wish to work in interpretive profession study the subjects described above. It is also suggested that managers who wish to recruit interpreters should look at these subjects as candidate qualifications.

**Subjects Recommended for Future Training**

One interpretation of the results of this research is that the consistently mentioned subjects should be the core subjects for interpretive training in Japan, while the identified discrepancies might be addressed in a different type of training course that would be offered in future. Two major staged training programs are needed. The first program should cover the core subjects in introductory-level training courses, which focus on communication, public speaking, risk management, and interpretive concepts, techniques, and design. These subjects should be taught in a workshop format that allows trainees to practice their individual skills and receive feedback on their skills.

The findings of this research are consistent with previous studies (Ballantyne & Hughes, 2001; Black & King, 2002; Weiler & Walker, 2014) that reported that tour guides viewed risk management, product knowledge, and communication/speaking skills as the most important aspect for a tour guide (see Table 7). Risk management should be paid more attention than trainers currently think it should be, as it was repeatedly listed as important only by the interpreters. Product knowledge varies from place to place and from individual to individual, and thus, might best be learned elsewhere (such as on the
A mastery of interpretive concepts and precepts (i.e., what uniquely defines interpretation) is necessary to perform interpretation, but the question for most interpreters probably is much more applied: How do I make a product “interpretive”? This question is underscored by a number of findings. The interpreters reported in their interviews that they would benefit from being able to look at professional-quality interpretive products already in place elsewhere. The interpreters and trainers alike recognized the need for experiencing interpretation and interacting with interpreters at other sites to enhance interpreters’ skills. In addition, both the interpreters and trainers listed designing interpretation as a necessary skill for interpreters, a point that has been repeatedly emphasized in the interpretation literature (e.g., Ham, 2013; Ward & Wilkinson, 2006). As one interpreter in this research stated, “They (interpreters) seem to be able to conduct interpretation when they are given a prepared program, but have difficulty in designing a program, explaining it to a supervisor, and performing it by themselves.”

A second training program might focus on managerial skills and target individuals who have a certain amount of experience in interpretation. The managerial skills suggested by the results include the management of interpretation-related works, evaluation of interpretation, planning interpretive projects and events, and public relations of interpretation. Particularly, evaluation skills were requested by the interpreters in this research, which makes sense in regard to previous research that has shown a shortage of evaluation skills among interpretive professionals in the Japanese context has been reported (Yamada & Ham, 2004). Training events need to be tailored to different needs and designed for multiple-staged interpreters from entry to specialist and supervisor. A reasonable model might be NAI’s, which offers two categories of training, including six certification programs: “one designed for interpreters who have little or no experience in interpretation and another targeting interpreters with four or more years of education or experience in the field” (2009, p. 7).

Challenges to Interpreter Training and Recommendations

When trainers encounter difficulties during a training program, it may be because a gap exists between the trainees being targeted by the program and the trainees who are actually attending the program. The trainers were asked to describe any difficulties that they encountered during past training courses. Almost half of the trainers reported an issue created by the diversity of the participants in one training program in terms of their experience and training needs (n=5) and the participants’ inadequate understanding of the subjects taught in the training (n=5). Fewer trainers identified an inadequate training facility (n=2), motivating to perform quality interpretation (n=2), and a low motivation to learn in training (n=1) as challenges. When asked whether the trainers perceived any shortcomings, challenges, or obstacles related to interpreter training in general, the following categories of responses were offered: quality of the training provided (n=6), wide diversity of the participants in each training course (n=3), insufficient on-the-job or on-site training (n=3), a lack of opportunity for interpreters to practice interpretation (n=2), and low recognition of the interpretive profession (n=1). According to these results and those derived from the interpreter interviews and questionnaires, four major challenges were identified.

Quality Assurance of the Training

The most frequently mentioned challenge of interpreter training by the trainers was in ensuring the quality of the training. One trainer suggested that a certification system should be put into place that would guarantee the quality of the skills acquired from the training program and allow recruiters to assess the qualifications of potential interpreters. Otherwise, “anyone can say I’m an interpreter regardless of their abilities.” This issue was also discussed by Black and Weiler (2005) and Huang and Weiler (2010) as a disadvantage of training (i.e., current training programs are not informed by research and theory and do not guarantee minimum standards of achievement). In the interviews, the trainers pointed out the disadvantages that stemmed from not having a nationwide training system, as this lack has contributed to the insufficient advancement of interpretive profession and little enhancement in the quality of interpretation. Such views imply that the training programs currently available in Japan contribute little to improving the skills and abilities of interpretive professionals. According to one interpreter, “the interpretive techniques taught there weren’t so helpful and I thought I’d be able to learn such things myself.”

The development of a nationally accepted training standard is needed—one that articulates the skills and abilities necessary for interpreters. Certifications are one recommended mechanism by which to assure the standards of interpretation performance (Black & Ham, 2005; Randall & Rollins, 2009). It will be practical for a non-profit organization to serve as the certification provider, such as NAI, in order to coordinate multiple profit-making organizations that currently offer interpreter training in Japan. Another recommendation is offering a training-of-trainer course to enhance or maintain the quality of training. Currently, no training for trainers is offered in Japan, and training events have been designed based on trainers’ intuitions and experiences. Trainers need to be informed by relevant literature and predecessors, such as NAI’s and USNPS’s training programs.

Diversity of Trainees’ Interpretive Experiences

The trainers were concerned with whether they met the trainees’ needs and wants because of the trainees’ diverse levels of interpretive experiences. According to one trainer, “it’s very difficult to decide on what level we should focus. Some are planning on starting a career from now. Some have experienced informative interpretation, while others have experienced only experiential interpretation. I’m afraid we can’t meet their various needs.” Another trainer mentioned, “not all training goes well because there are no promised subject for successful training.” This diversity issue seemed contributing to the trainees’ insufficient understanding of the subjects taught in training, as noted by the trainers, as well as little learning for trainees who have already gained some interpretive experiences, as reported by the interpreters. Training events should target individuals grouped by their previous experiences and conceptual skills to avoid the difficulties of teaching widely diverse groups of trainees in the same course. It should be noted, however, that although the diversity of trainees in one program can indeed become an issue, such diversity might actually be advantageous in a training program that is designed to promote collaborative learning (Weiler & Ham, 2001a).

This diversity of the trainees’ interpretive levels illustrates, in part, “a culture” of the interpretation training in Japan—trying to collect as many trainees as possible in one course to increase profitability for the training provider, which results in assembling
trainees with diverse levels of interpretive experiences, needs, and motivations. One trainer explained the situation like this: “We must seek the greatest number [of participants] for drawing customers, as widely as possible. If we don’t target a wide range of people, we wouldn’t get enough number of participants [in one training course].” According to two trainers, interpretation is promoted as a means of communication that can be applied to any workplace and even within the daily lives of those taking the course, rather than a profession at parks, protected areas, and other free-choice learning settings. The small number of questionnaire respondents in this research probably indicated the inclusion of individuals in the courses who did not work as interpreters and may have lower levels of engagement and importance in interpretation.

**Insufficient On-the-job Training**

Another challenge mentioned both by the trainers and interpreters was the insufficiency of on-the-job training. Repeat exercises help improve the performance quality of interpretation, and appropriate feedback from co-workers on an interpreter’s performance is of much help to subjectively assess what and how to improve. For example, “I wish there were opportunities like a teaching practice to conduct interpretation in front of actual children and adults and then receive advice from a trainer,” one interpreter said, while a trainer said, “I’m concerned as to how we’d be able to follow up with the participants after they attend our training.” Another trainer illustrated the situation this way:

I feel the number of interpreters who don’t get internal (on-the-job) training is increasing. They don’t have anyone to report to, a superior who teaches and advises them, or someone who takes the time to give feedback on their daily performances. That’s why they come here (the training course) to learn.

In order to offer on-the-job training, relevant individuals would need to be trained—a need for a training-of-trainer course. One trainer mentioned, “I think the OJT (on-the-job-training) is more effective and efficient (to train interpreters), but should be offered more systematically.” On-the-job training would allow trainers to better relate to problems that interpreters actually encounter and help enhance the specific skills they should acquire. Applying the NAI’s Certified Interpretive Trainer program (e.g., skills of facilitating training sessions, evaluations, and coaching) to the Japanese context may help meet the needs and problems encountered by trainers and interpreters in this research.

**Interpretation as a Management Tool**

The contributions that interpretation can make to an organization or agency need to be demonstrated, so that recognition and support for interpretation will increase. One interpreter in his interview was concerned about his performance’s contribution to accomplishing one of his organization’s final goals. Another interpreter mentioned that the purpose of interpretation in his organization seemed to be unclear. A concept of the “use of interpretation to accomplish management objectives” (2013, p. 8), one of the NAI’s Certified Interpretive Manager’s skills, seems to be missing from interpretation in Japan. According to another interpreter, “the importance of interpretation isn’t acknowledged in my organization…. No matter how well we perform, we aren’t appreciated.” With no plan or strategy to articulate interpretation’s role in the organization, its purposes and functions are hardly visible. Lacking a legitimate place in an organization’s mission contributes to little social recognition of the interpretive profession, a problem raised by both the trainers and interpreters. Notably, this issue was raised more than a decade ago in the Japanese context in order to improve the quality and recognition of interpretation (Yamada & Ham, 2004).

What Ward and Wilkinson (2006) described as “meaningful interpretation” has not largely occurred in Japan. Meaningful interpretation, in their view, is conducted with clear goals and objectives to meet the needs of both management and visitors. In this way, its benefits not only flow directly to visitors (e.g., increasing visitor enjoyment of the resource), but also closely align with the goals of the management (e.g., protecting the resource and visitors). Interpretation connects visitors to resources and protects and makes sense of that connection within the mission and management mandates of the organization. A similar view was discussed by one interpreter in this research: “I’m always concerned about whether I’m providing the audience with new views or changing their ways of thinking and then, contributing to a sustainable society, rather than offering mere entertainment.” According to Ward and Wilkinson, “if interpretation is not purposefully done to somehow address the mission or goals of the place, it becomes simply entertainment” (2006, p. 24). Ham (2013) called this type of interpretation “fact-based entertainment” without a purpose and destination. To integrate a management role into the current practice of interpretation in Japan, training in interpretive planning should be offered, so that it could cover skills for master plans, exhibit plans, conceptual plans for individual sites (see Ham, Housego, & Weiler, 2005), and comprehensive plans. If interpretation is perceived as a communication tool with the purpose of protecting resources and visitors, and of promoting the agency itself, then a larger number of professionals in free-choice learning settings may be attracted to interpretation training. Such a chain of events would almost certainly contribute to enhancing the social recognition of the interpretive profession in Japan.

**Conclusion**

Weiler and Ham (2002) suggested that “training efforts must be systematically evaluated and lessons learned from these evaluations must be documented and disseminated widely and used to inform future training efforts” (p. 63). In this spirit, this research has attempted to add a Japanese perspective to the literature on interpreter training by identifying both consistencies and inconsistencies in the perspectives of Japanese interpreters and trainers related to professional growth and development in this field. It provided a basis for a suggested general framework and the contents of interpreter training in the Japanese context. Offering training for multiple-staged interpreters and trainers is needed. However, with a small number of not-randomly selected participants in the questionnaires, this research may have offered incomplete views. Future research will need to include a larger number of systematically selected interpreters to assess representative needs. For a training program to coincide with the needs of multiple stakeholders, as claimed by Lackey (2008), future research should also investigate the perspectives of managers, agencies, and other free-choice learning organizations. Evaluation of the effectiveness of existing training programs is another area waiting for attention. Such studies would not only help to improve ongoing training programs but would also add needed insight into the design of future programs (Weiler &


References


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IN SHORT
The Churches of Venice: Sacred Places or Museum Spaces?

Venelina Dali Saunders
University of Leicester
vds2@alumni.leicester.ac.uk
1.310.800.1996

Abstract
Many churches in Venice have become landmarks due to their artistic treasures. Their increased volume of visitors often has a primary goal of sightseeing rather than participating in religious services. Consequently, some of the churches have employed interpretation methods to satisfy the demand of mass tourism. The aim of the study is to investigate the role of current on-site interpretations of the churches and relate them to the visitors’ perceptions and experiences. The evaluation relies on qualitative methods such as case studies, visitors’ surveys, site observations, and interviews. The results are analyzed through the framework of the constructivist-learning theory, which affirms that people create their own meanings based on previous knowledge. The findings demonstrate that the interpretive methods on-sites present the visitors with experiences not usually associated with religious sites. The churches are experienced as tourist attractions rather than sacred sites—a perception that clearly interferes with their original purpose.

Keywords
churches of Venice, interpreting religious sites, religious heritage, churches and tourism, cultural tourism

A New Interpretive Pedagogy
Many of the churches in Venice have become a popular destination for tourists with different cultural and travel backgrounds. As a result, various interpretation and representation methods have been employed to satisfy the demand of mass tourism: admission fees, leaflets, spotlights on artwork, audio tours, and other didactic materials have all been developed. However, the parallel use of the churches as secular and sacred place has created a number of management difficulties, including keeping the spiritual values, in addition to their historical, aesthetic, and cultural significance.
Empirical research is essential in order to develop appropriate planning and effective approaches towards the practice, benefits, and significance of applying interpretation methods to religious sites. The aim of this research was to investigate the role of the current on-site interpretations in the Venetian churches in relation to visitors’ perceptions and experiences. The study relied on qualitative methods such as case studies, visitors’ surveys, site observations, and interviews. The findings were analyzed through Piaget’s theory of cognitive development and constructivist-learning theory, which affirms that people create their own meanings based on previous knowledge.

There is an ample body of literature on the effective role and benefits of heritage interpretation for conveying the social and cultural value of the site, enhancing the visitor understanding and appreciation of the place. However, there is a significant gap in the existing literature about the use and benefits of interpretation methods specifically to religious sites. In 2005, the participants of the ICOMOS–US International Symposium identified that there is urgent need of establishing acceptable methods and boundaries, as well as better guidance of interpreting religious and sacred sites. If religious sites are commercialized and presented for easy tourist consumption, it will create conflict with the visitor expectations and the site will lose its authenticity.

In order to understand what is the motivation and expectation of the site managers, in-depth interviews were conducted with two religious authorities: Don Gianmatteo Caputo, director of the Pastoral Tourism and Cultural Heritage in Venice, and Monsignor Timothy Verdon, director of the Archdiocese of Florence. Both authorities agreed that the artwork in the churches should be presented first for their original function and religious meaning and only secondly in terms of artistic value. However, currently the church managers are not trained or equipped with the proper way of educating the visitors of the significance and meaning of the sites. Municipal offices and other local organizations, which often have different goals, currently maintain the churches of Venice. One of those organizations is Chorus, which has established an entrance fee to fifteen churches, a practice not favored by the majority of the religious authorities in Venice.

The conclusion from the interviews demonstrated that there is a clear disagreement in the use of interpretation methods in the churches due to different management entities. Therefore, the problem has created dissonance between the operations of the churches and their main purpose.

The study used four case studies to investigate the current state of interpretive methods employed by four churches in Venice: Saint Mark’s Basilica and Frari, with large numbers of visitors, were compared to two smaller churches, San Zaccaria and San Lio. The sites were chosen for their diverse choices of interpretation methods. The findings revealed that when the first two sites are not used for religious services, their role has been alternated. There are visible modifications of the interior space of Saint Mark’s Basilica and Frari: ropes separate religious from secular space; text panels are installed next to artwork, highlighted with spotlights; leaflets and guidebooks are available to use. Furthermore, the entrance to Frari and to some specific areas in the churches, with the exception of San Lio, required an entrance fee. The interpretive methods in Frari relate mainly to the artistic significance of the sites. The visitors are provided with information on the historical and artistic significance, rather the spiritual intention of the site. With fewer visitors, San Zaccaria and San Lio did not use any interpretive methods.

Visitor surveys were conducted to investigate the role and effectiveness of the interpretation in the churches and the experience of the religious sites. The sample population for the research was collected over a ten-day period. A total of 100 surveys were completed, but only 83 were used due to some questionnaires with incomplete or missing sections. In addition, visitor observations were also conducted, allowing a comparison between visitor responses and actual behavior. The survey results showed that the main negative impact on the visitor experience in the churches of Venice comes mainly from the request for an entrance fee. Eighty-six percent of those surveyed did not know what the fee is intended and 78% disagreed with the practice. In addition, 81% of the visitors no longer felt the spirituality of the place, however, 65% still responded emotionally to the sites. Although many of the churches provide some form of interpretive materials and leaflets, 67% of the visitors used their own source for information and only 18% used the materials on site.

The meaning of the religious sites comes from their use and the practices associated with them. Yet, the spiritual practice cannot be described with words or interpretive signs. According to Jean Piaget, information cannot be just “given” to the people. Instead, they must build their knowledge through experience to enable them to create understanding. Similarly, the constructivist learning theory suggests that both knowledge and the way it is obtained are dependent on the mind of the learner. The survey response suggests that when visitors are asked to pay a fee they become confused because they associate the site with the atmosphere and spiritual experience rather than with a product they have to purchase. Since the common visitor is not aware of the maintenance aspects of sacred and religious sites, the request for fee gives assimilation to other venues where the consumer receives a product for the payment. The wait in long lines to enter a church (primarily for San Marco), the excessive noise and overcrowding, the use of labels and spotlights in front of artwork—all these factors present the visitors with a new experience that is not usually associated with religious sites.

According to visitors’ comments describing their visit to Frari and Saint Mark’s Basilica, they assimilated the sites to “museum,” “tourist attraction,” and “place with magnificent aesthetic value,” rather than a spiritual place. They perceive the church as a place for “tourist consumption.” These new assimilations clearly interfere with the original purpose of the religious site and construct a new scheme for the visitors.

Although limited in scope, the findings from this research reveal that the current interpretive methods used in some of the churches of Venice have affected the visitor experience and perception of the sites’ spiritual function. The alteration in the churches and the current interpretive elements has created conflict with the existing schemas of the visitors. The sites have shaped a new sense—as places maintained for tourist consumption rather than spiritual practices. Using museological and interpretive elements should not reduce the identity of the churches, but assist in emphasizing both their artistic and spiritual significance. The proper understanding of tangible and intangible values of the Venetian churches from everyone who chooses to enter their space demands further research of the effective use of interpretive methods in religious sites.

End Notes

Analysis of Best Practices for Interpretation Development at Public Gardens

Nate M. Tschaenn
1001 Denmark St.
Oklahoma City, OK 73099
ntschaenn@gmail.com
(440) 364-3731

Robert E. Lyons, Ph.D.
Director of Longwood Graduate Program
University of Delaware

Dottie Miles
Manager of Exhibitions and Interpretation
Longwood Gardens

Jules Bruck, Ph.D.
Professor
University of Delaware

Abstract
Interpretation can be the most effective way for public gardens to communicate with their audiences. However, many public gardens struggle to understand interpretation and how to best develop it. A survey conducted of professionals at 174 different public gardens investigated various approaches to interpretation development and their effect on the perceived quality of interpretation and interpretation development practices of the organization. These approaches included staff and volunteer training, planning documents, evaluation, and staff composition.

The results of this study revealed many interpretive development practices that are yielding significant benefits for public gardens. The data also revealed that the majority of public gardens have significant room for improvement with regard to interpretation development. For instance, organizations were more likely to be satisfied with the interpretive media that they routinely evaluated, but few routinely conducted evaluation.
Recommendations that should help guide decision-making at public gardens resulting from this research are discussed.

Keywords
interpretive planning, development, best practices, public gardens, master plans, evaluation

Introduction
Although most public gardens feel that interpretation is important to their organization’s mission, many of these organizations may lack the knowledge or resources necessary to effectively communicate with their audience using an interpretive approach. There is a significant amount of literature regarding best practices of interpretation and interpretation development, but none could be found that analyzes to what extent public gardens are following these best practices, or what kind of results these practices are having on interpretation and development processes. This research sought to analyze the current state of interpretive planning and development practices at public gardens. Specifically, this research aims to identify:

- To what extent public gardens are following best practices for interpretation planning and development described in literature and past research (e.g., interpretive planning, evaluation, staff and volunteer training).
- If these practices are having a positive impact on the quality of interpretation or the development processes.
- What level of training in interpretation exists or is provided at public gardens.
- What methods of interpretive planning are most valued by public gardens.
- What interpretive planning and development strategies are utilized by the gardens that are most satisfied with the quality of their interpretation and development strategies.
- The most common barriers faced in interpretation development.

The results of this research aim to identify the most effective interpretive development practices and strategies at public gardens in order to aid in decision-making and provide more meaningful interpretation for visitors.

Methods
A survey targeting professionals at public gardens involved in the process of developing interpretation at public gardens was distributed through the American Public Garden Association (APGA) member mailing list provided by the APGA. For the purpose of this survey, formal education opportunities, such as continuing education classes or K–12 classes, were not included in the definition of interpretation. Responses were collected between October 1, 2012, and November 7, 2012. Incomplete responses were removed from analysis, as were those where the responder was not responsible for some aspect of the interpretation development process. All told, 289 participants from 174 different organizations completed the survey.

The survey aimed to provide insight into the various interpretive development processes used by public gardens by determining the extent to which various methods of planning and development were implemented and the perceived value or effectiveness of those methods. In the beginning of the survey, respondents were asked on a Likert scale to what degree they agreed or disagreed with a number of statements regarding interpretation at their organization. Survey respondents were then asked about their interpretive development practices. Difference of means tests were conducted between those groups following and not following each specific practice in order to determine whether it had an effect on the responses to the Likert scale statements at the beginning of the survey.

Four case studies were also conducted at organizations identified as having excellent interpretation in a preliminary survey of APGA members. These organizations included the United States Botanical Garden, Chicago Botanic Garden, University of California Davis Arboretum, and Monterey Bay Aquarium. Information gathered from these case studies was used to help inform the development of the survey questions.

Results and Discussion
Each organization is unique in its interpretation needs and resources (Brochu, 2003), but the current research revealed certain planning and development practices yielding significant benefits for many public gardens. Our research indicated that only 41% of survey respondents were satisfied with the overall quality of interpretation at their organization (Table 1), leaving room for improvement for the majority of public gardens. Also revealed in the overall analysis of interpretation development at public gardens was that only half of respondents indicated they were satisfied with their interpretation development practices. Budget and training in the field of interpretation were the biggest issues identified with only 21.7% satisfied with their budget and 28.4% satisfied with the training their organization provides for staff and volunteers.

<table>
<thead>
<tr>
<th>Survey Statement</th>
<th>Survey Choices (numerical designation)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am satisfied with the process by which interpretation is developed at my organization.</td>
<td>Strongly disagree (1)</td>
<td>Disagree (2)</td>
</tr>
<tr>
<td>My budget sufficiently supports interpretation.</td>
<td>9</td>
<td>73</td>
</tr>
<tr>
<td>My organization provides sufficient training and/or professional development in the field of interpretation for related staff and volunteers.</td>
<td>50</td>
<td>106</td>
</tr>
<tr>
<td>I am satisfied with the overall quality of interpretation at my organization.</td>
<td>31</td>
<td>88</td>
</tr>
<tr>
<td>I am satisfied with the overall quality of interpretive signage at my organization.</td>
<td>15</td>
<td>78</td>
</tr>
<tr>
<td>I am satisfied with the quality of the guided tours provided by my organization.</td>
<td>22</td>
<td>64</td>
</tr>
</tbody>
</table>

Table 1. Degree to which survey respondents agreed or disagreed with specific statements regarding interpretation at their organization.
Table 1 from respondents with and without interpretive plans.

<table>
<thead>
<tr>
<th>Respondent Groups</th>
<th>Strongly Agree (5)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Disagree (2)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree or formal education in the field of Education?</td>
<td>Yes</td>
<td>26</td>
<td>11</td>
<td>3.53</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>77</td>
<td>23</td>
<td>3.26</td>
</tr>
<tr>
<td>Degree or formal education in the field of Museum Studies or Interpretation?</td>
<td>Yes</td>
<td>24</td>
<td>9</td>
<td>3.84**</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>79</td>
<td>25</td>
<td>3.22**</td>
</tr>
</tbody>
</table>

**Significant difference within column at 99% confidence interval in two-tailed difference of means test.

Table 2. Comparison of degree of feeling adequately trained in specific responsibilities in interpretation for respondents with and without formal training in fields of Education, Museum Studies, or Interpretation.

<table>
<thead>
<tr>
<th>Survey Statements</th>
<th>Interpretive master plan or interpretive prospectus</th>
<th>Document(s) outlining desired interpretive messages and/or goals for individual gardens or exhibits.</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am satisfied with the process by which interpretation is developed at my organization.</td>
<td>**</td>
<td>**</td>
<td>2.99**</td>
</tr>
<tr>
<td>The interpretive messages that my organization strives to communicate are clearly defined</td>
<td>**</td>
<td>**</td>
<td>2.87**</td>
</tr>
<tr>
<td>I am satisfied with the overall quality of interpretation at my organization.</td>
<td>**</td>
<td>**</td>
<td>2.87**</td>
</tr>
<tr>
<td>I am satisfied with the overall quality of interpretive signage at my organization.</td>
<td>**</td>
<td>**</td>
<td>2.68**</td>
</tr>
</tbody>
</table>

**Significant difference within column at 95% confidence interval in two-tailed difference of means test.

Table 3. Comparison of responses to specific statements regarding interpretation from Table 1 from respondents with and without interpretive plans.

Educational Background

Ham (1992) states that many interpreters enter their jobs without formal training or prior experience. Unsure of just how they should approach their roles as communicators, they often take a formal approach to education, even though interpreters do not teach their audiences in the same sense that they were taught in school. Survey results from the current research support Ham’s findings, showing that only 15.6% of respondents had an academic degree or formal training in the fields of interpretation or museum studies (Table 2). Those who did were more likely to feel adequately trained in their interpretation responsibilities than those who did not. In fact, respondents in possession of a degree or formal training were 10 times more likely to agree or strongly agree with the statement, “I feel that I am adequately trained in best practices for my specific responsibilities in interpretation,” than those who did not. Although the mean was slightly higher for individuals with formal training in the field of education compared to those without degrees in either field, the difference was not significant, which may highlight a difference between formal education and interpretation.

In order to improve the quality of interpretation at public gardens as whole, the first step that should be taken is to improve staff training and professional development in interpretation. It is difficult to take an interpretive approach to communication without first having an understanding of what interpretation is. It is unclear from current research how well public garden professionals currently understand the differences between interpretation and information or formal education and further research may be required to fully understand to what extent these professionals are educated in best practices for interpretation. However, the current research did show that few are entering the public horticulture field with any formal training in interpretation and those who do are more likely to feel adequately trained in their interpretive responsibilities. If public horticulture professionals responsible for interpretation development do not have prior training, training must be provided or encouraged by the organization. While this may not be possible for every staff member involved in interpretation development, it is strongly recommended that each public garden have at least one staff member with training in interpretation. This person should promote the basic principles of interpretation and serve as an advocate for the interests of the visitor.

Interpretive Master Plans and Interpretive Plans for Individual Gardens or Exhibits

Our research indicated that interpretive master plans and interpretive plans for individual gardens or exhibits are providing significant benefits for public gardens. Public gardens with these types of interpretive planning documents were more likely to be satisfied with their interpretive planning process and the overall quality of interpretation and interpretive signage at their organization than those who did not (Table 3). They were also more likely to have interpretive messages that were clearly defined and create interpretation using themes and subthemes, i.e., core messages and supporting messages.

There is no consensus regarding contents or level of detail for different types of interpretive plans, only general guidelines. An interpretive master planning process often focuses on the development of a single overarching theme or core message, and several supporting subthemes and the overarching interpretive goals and objectives of the organization (Veverka, 2011a; Brochu, 2003). Interpretive master plans sometimes go into more detail by outlining more specific interpretive messages, goals, and objectives for the individual gardens and exhibits of the public garden. So, as per our survey, an interpretive approach to communication without first having an understanding of what interpretation is. It is unclear from current research how well public garden professionals currently understand the differences between interpretation and information or formal education and further research may be required to fully understand to what extent these professionals are educated in best practices for interpretation. However, the current research did show that few are entering the public horticulture field with any formal training in interpretation and those who do are more likely to feel adequately trained in their interpretive responsibilities. If public horticulture professionals responsible for interpretation development do not have prior training, training must be provided or encouraged by the organization. While this may not be possible for every staff member involved in interpretation development, it is strongly recommended that each public garden have at least one staff member with training in interpretation. This person should promote the basic principles of interpretation and serve as an advocate for the interests of the visitor.

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for individual gardens or exhibits. Table 5. Usefulness of a document(s) that outlines desired interpretive messages and/or goals for individual gardens or exhibits.

<table>
<thead>
<tr>
<th>Survey Choices (numerical value)</th>
<th>Percent of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very useful (1)</td>
<td>27.6%</td>
</tr>
<tr>
<td>Useful (2)</td>
<td>33.7%</td>
</tr>
<tr>
<td>Somewhat useful (3)</td>
<td>32.6%</td>
</tr>
<tr>
<td>Useless (4)</td>
<td>6.1%</td>
</tr>
<tr>
<td>Total responses Mean</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>2.17</td>
</tr>
</tbody>
</table>

Table 4. Usefulness of an interpretive master plan or interpretive prospectus in developing interpretation.

<table>
<thead>
<tr>
<th>Survey Choices (numerical value)</th>
<th>Percent of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very useful (1)</td>
<td>53%</td>
</tr>
<tr>
<td>Useful (2)</td>
<td>31.3%</td>
</tr>
<tr>
<td>Somewhat useful (3)</td>
<td>14.8%</td>
</tr>
<tr>
<td>Useless (4)</td>
<td>.9%</td>
</tr>
<tr>
<td>Total responses Mean</td>
<td></td>
</tr>
<tr>
<td>115</td>
<td>1.63</td>
</tr>
</tbody>
</table>

Table 5. Usefulness of a document(s) that outlines desired interpretive messages and/or goals for individual gardens or exhibits.

<table>
<thead>
<tr>
<th>Survey Choice</th>
<th>Percent of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpretable master plan or interpretive prospectus</td>
<td>36.4%</td>
</tr>
<tr>
<td>Documents outlining desired interpretive messages and/or</td>
<td>47.3%</td>
</tr>
<tr>
<td>goals for individual gardens or exhibits</td>
<td></td>
</tr>
<tr>
<td>Documents outlining desired messages and/or goals and</td>
<td>32.7%</td>
</tr>
<tr>
<td>objectives for events and daily programming</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>22.9%</td>
</tr>
</tbody>
</table>

Table 6. Types of interpretive planning documents created or amended in the past 15 years as indicated by 275 survey respondents.
Tables outlining desired messages and/or goals for events and daily programming were rated the most useful or very useful for interpretation (Table 7). Organizations creating these plans were more likely to be satisfied with their interpretive planning processes and the overall use of interpretive planning documents for events and daily programming.

Overall, interpretive planning documents for events and daily programming were rated the most useful or very useful for interpretation (Table 7). Organizations creating these plans were more likely to be satisfied with their interpretive planning processes and the overall usefulness of interpretive plans, particularly interpretive master plans, was reduced.

Not, our findings indicated that the value of interpretive plans, particularly interpretive master plans, was reduced. Without documents outlining desired messages and/or goals for events and daily programming, staff interactions have the potential to be highly memorable experiences for visitors (Pine II & Gilmore, 1999), but interacting with visitors of a variety of ages and backgrounds and answering questions in a way that relates to the visitor is not something that comes naturally to everyone. By training staff to recognize visitor motivations and to capitalize on the visitors’ curiosity rather than telling them random facts, these interactive experiences can be greatly improved from the visitor’s perspective.

Organizations that are satisfied with the overall quality of their interpretation are more likely to be training their staff and volunteers in personal interpretation techniques to volunteers or docents. These plans are likely used more than others, given their immediate value over a shorter term.

By creating a document from an interpretive planning process that includes a theme, sub-themes, and specific messages or storylines, information can be easily disseminated to staff and volunteers responsible for interpretive programs. This will help to ensure consistency in messaging. By going a step further and adding goals and objectives, conducting program evaluation is simplified and measures of success are identified (Veverka, 2011a), which can aid decision making when allocating programming resources.

Survey Groups Providing Training to Horticulture Staff, Visitors, or Docents.

<table>
<thead>
<tr>
<th>Survey Statement and Responses</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your organization provide training in personal interpretation techniques to horticulture staff in order to help them communicate more effectively with guests?</td>
<td>3.43**</td>
</tr>
<tr>
<td>Does your organization provide training in personal interpretation techniques to volunteers or docents?</td>
<td>3.20**</td>
</tr>
</tbody>
</table>

Table 9. Comparison of responses to the statement, “I am satisfied with the overall quality of interpretation at my organization,” from respondents whose organizations provide training in personal interpretation and those that don’t.

Table 7. Usefulness of documents outlining desired messages and/or goals for events and daily programming.

Table 8. Comparison of responses to specific statements regarding interpretation from Table 1 (mean) from respondents with and without documents outlining desired messages and/or goals for events and daily programming.

The interpretive messages that my organization strives to communicate are clearly defined. The interpretation at my organization is clear and concise. The interpretation at my organization is created using themes and supporting sub-themes (i.e. core message and supporting messages). I am satisfied with the overall quality of interpretation at my organization.

**Significant at 99% confidence interval in two-tailed difference of means test.

**Should also be periodically and concurrently reviewed and updated with staff changes; if not, our findings indicated that the value of interpretive plans, particularly interpretive master plans, was reduced.

Interpretive Planning for Events and Daily Programming

Overall, interpretive planning documents for events and daily programming were rated the most valuable of the four types of plans analyzed with 86.1% of respondents rating them as useful or very useful for interpretation. Organizations creating these plans were also more likely to be satisfied with their interpretive planning processes and the overall quality of interpretation than those who did not (Table 8). These plans are likely used more than others, given their immediate value over a shorter term.

Staff and Volunteer Training

Public gardens are unique among museums because the staff who manage the resources on display are highly knowledgeable, and are often in a position to interact or care for the resources while interacting with visitors and answering their questions. For example, Longwood Gardens will often have a staff member in their water lily pool maintaining the Victorian water lilies during visitor hours. These staff will often interact with curious visitors while caring for the plants. Staff interactions have the potential to be highly memorable experiences for visitors (Pine II & Gilmore, 1999), but interacting with visitors of a variety of ages and backgrounds and answering questions in a way that relates to the visitor is not something that comes naturally to everyone. By training staff to recognize visitor motivations and to capitalize on the visitors’ curiosity rather than telling them random facts, these interactive experiences can be greatly improved from the visitor’s perspective.

Organizations that are satisfied with the overall quality of their interpretation are more likely to be training their staff and volunteers in personal interpretation techniques (Table 9). Despite the fact that a large portion of survey respondents (83.5%) indicated
Interpretation Development Teams

While one-third of survey respondents were dissatisfied with the overall quality of interpretation at their organization, they were less satisfied with the overall quality of interpretative signage, with 44% indicating they were not satisfied (Table 1). On the other hand, survey respondents were overwhelmingly satisfied with the overall quality of guided tours at their organization, with only 11% not satisfied. Guided tours and interpretive signs were the most common types of interpretive media offered by public gardens, but since interpretive signage is not first-person interpretation, more visitors to public gardens likely experience it (Moscardo et al., 2007). Therefore, improving the quality of interpretive signage at public gardens in general would likely have a significant impact on the overall quality of interpretation.

Public gardens looking to improve their interpretive signage should consider internal dedicated interpretation development teams. Brochu (2003) states that an interpretive planning process “usually requires input from a number of people.” This supports survey findings that those who were satisfied with quality of their interpretive signage were more likely to have a team dedicated to interpretation development (Table 10). Those with such teams were 2.8 times more likely to strongly agree or agree with the statement, “I am satisfied with the quality of interpretive signage at my organization,” than those who did not.

Our findings also indicate that public gardens with similar teams could be creating and reviewing interpretation on a more consistent basis to keep their products current and/or fresh. They may be more likely to use handwritten signs or those that can be made quickly in house. They can also update these signs more frequently. Holly Shimizu, director of the United States Botanical Garden, said that interpretation at her organization made quickly in house. They can also update these signs more frequently. Holly Shimizu, director of the United States Botanical Garden, said that interpretation at her organization strives to communicate are clearly defined. This sort of system would most likely require an interpretive development team.

That their organization encouraged horticulture staff to interact with guests, only 18.7% indicated that horticulture staff were provided with training in personal interpretation. Instead, such training was more likely to be provided to volunteers and docents, as indicated by 68.0% of survey respondents. It is clear that providing this training to horticulture and other front-line staff would be highly beneficial.

Training need not be limited to horticulture staff or staff with extensive knowledge of the resource. Any staff member who potentially interacts with the public has the potential to improve the visitor experience. The Monterey Bay Aquarium only hires people for security who are comfortable with guest interaction and provides them with training in first person interpretation. Many are Certified Interpretive Guides through the National Association for Interpretation. As a result, the security staff is not only more comfortable interacting with guests, which allows them to be more effective at their primary duties, but are able to improve the visitor experience by creating memorable interactive experiences and addressing questions (Uretsky & Wright, 2013).

**Significant at 99% C.I. in two-tailed difference of means test.

Table 10. Comparison of responses to specific statements regarding interpretation from Table 1 (mean) from respondents having a team dedicated to interpretation development at their organization with those who do not.

Table 11. Comparison of the degree to which survey respondents agreed or disagreed with the statement, “I am satisfied with the overall quality of interpretive signage at my organization,” for groups evaluating and not evaluating interpretive signage.

**Significant difference in column at 99% confidence interval in two-tailed difference of means test.
to be satisfied with the process by which they developed interpretation, clearly define interpretive messages, develop interpretation using core messages or themes, and connect the visitors’ interests with their resources (Table 10). They were also more likely to feel that their budget sufficiently supported interpretation, though just 27% of these survey respondents felt that it did.

Slightly fewer than half of survey respondents reported having an interpretation development team. This study has shown that encouraging their formation and use could improve the overall quality of interpretation at public gardens. Inadequate budget or resources are also recognized as likely barriers to creating interpretive development teams at some organizations.

**Evaluation of Interpretation**

Survey respondents who were satisfied with the quality of their interpretive signage were also more likely to evaluate it, which seems to significantly effect the quality of interpretation (Table 11). Fifty-nine percent of respondents who evaluated interpretation were satisfied with overall quality of interpretive signage at their organization compared to 32.9% for those who did not. This was also the case in the relationship between how satisfied survey respondents were with the quality of their guided tours and whether or not they evaluated them with 90.2% of those conducting evaluation satisfied compared to 61.7% of those who did not (Table 12). Unfortunately, only 30% of survey respondents reported that their organization routinely conducted evaluation of interpretive media or messages (Table 13). Visitor observations were also the most common method of conducting evaluation, reported by approximately 20% of survey respondents, and may not be the most effective method of conducting evaluation (McManus, 1994).

Only 20% of survey respondents indicated that their organization routinely conducted front-end, or preliminary, evaluation of interpretive media or messages. By not conducting front-end evaluation, public gardens risk developing interpretive messages that are uninteresting, not relatable, too complex, or too simple for visitors.

Evaluation also allows an organization to assess the effectiveness of its interpretive media and activities for interpretation improvement. Through defined goals and objectives, interpretive plans define what an organization wants to achieve with their interpretive activities (Merritt, 2008). Without evaluation, it would be impossible to determine if interpretive goals and objectives are being achieved, which would diminish the value of an interpretive plan.

**Summary**

From the current research, we can determine that public gardens following the best practices for interpretation development that were analyzed in the survey are more likely to be satisfied with their interpretation. Current research also revealed that the majority of public gardens are not utilizing most of these practices, though some practices were more commonly utilized than others.

Recommendations include incorporating the following practices shown to be valuable through the current research:

- Creation of interpretive planning documents
- Evaluation of interpretive messages and media
- Formation of teams dedicated to interpretation development
- Training in interpretation for staff responsible for interpretation development
- Training in personal interpretation for frontline staff and volunteers

Interpretive plans were determined to be effective tools for interpretation development, but several pitfalls were identified that can potentially limit an interpretive plans value. In order to avoid these problems it is recommend that public gardens:

- Revise or update plans on a regular basis especially after staff changes.
- Take into consideration funding or incorporate a dedicated budget into the plan.
- Involve all staff and stakeholders in the planning processes for interpretive master plans and for interpretive plans for gardens and exhibits.
- Before endeavoring to create an interpretive master plan, make sure all stakeholders fully understand how the interpretive planning process will be conducted and how the plan will be used.
- Broad themes, such as those outlined in an interpretive master plan, should be used to inform and develop more specific interpretive planning projects such as those used in the development of individual garden or exhibits.
Further study is recommended to determine additional best practices for interpretive planning for public gardens, particularly for interpretive master planning. This could include recommendations regarding the level of detail that should be included in interpretive plans and how interpretive plans can be utilized and applied to future interpretive planning projects. It could also include recommendations for best practices for how interpretive planning processes should be conducted.

References


Manuscript Submission

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Carolyn J. Ward, Ph. D.
CEO, Blue Ridge Parkway Foundation
322 Gashes Creek Road
Asheville NC 28803

cward@brpfoundation.org
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