



National Park Service Interpretation and Education Training Needs Assessment

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Table of Contents

	Page
Table of Contents	i
List of Tables	iv
List of Figures	vi
 Executive Summary	 1
 Introduction.....	 4
Study Purpose.....	4
 Methods	 5
Competency Development	5
Instrument Development	7
Sample and Data Collection.....	7
Response Rate	7
Data Analyses	8
 Results	 9
Description of Study Participants	9
Perceptions of Importance Assigned to Interpretation and Education Competencies	11
Perceptions of Personal Level of Preparedness Assigned to Interpretation and Education Competencies	13
Mean Weighted Discrepancy Scores (MWDS) for each Interpretation and Education Competency Category	15
Mean Weighted Discrepancy Scores: Supervisors’ Interpretation and Education Competencies	17
Do supervisors have different training needs than non-supervisors?.....	18
Do staff with different employment levels (GS) place different levels of importance on different competencies?.....	19
Do staff with different employment levels (GS) report different levels of preparedness on different competencies?	21
Do staff with different employment levels (GS) have different training needs (indicated by MWDS)?	23
Do GS 0-9 employees have different training needs than GS 10-15 employees?	25
Do staff with different years of experience in current position have different training needs?	25
Do staff with different levels of experience in I&E have different training needs?	27
Is there a relationship between the number of years worked in current position and Mean Weighted Discrepancy Score composites?.....	29
Is there a relationship between the number of years worked in Interpretation and Education and Mean Weighted Discrepancy Score composites?.....	29

Does the amount of time spent on responsibilities related to I&E influence training needs?	29
Is there a relationship between items pertaining to how often tasks are undertaken (items 83-100 on survey) and importance composites?	29
Are there different training needs depending upon the age of individuals?	29
Conclusions.....	30
What are the biggest training needs for NPS I&E staff?	31
What are the biggest training needs for NPS I&E supervisors?	31
Do supervisors have different training needs than non-supervisors?	31
Do staff with different employment levels (GS) have different training needs (indicated by MWDS)?	32
Do staff with different years of experience in current position have different training needs?	32
Do staff with different levels of experience in I&E have different training needs?	32
Are there different training needs depending on the age of individuals?	33
Summary	33
References.....	34
Appendices	37
Appendix A – Cover Letter	39
Appendix B – Survey Instrument	44
Appendix C – Demographic Charts	66
Appendix D – Importance Tables and Charts	70
Appendix E – Preparedness Tables and Charts.....	84
Appendix F – Mean Weighted Discrepancy Score Tables and Charts.....	100
Appendix G – Supervisor Only Competency Tables and Charts	112
Appendix H – I&E Tasks and Techniques Tables and Charts.....	125

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List of Tables

Table #	Page
ES1	Top 7 Training Needs based on Mean Weighted Discrepancy Scores..... 2
1	Summary of Demographics 9
2	Top Three Most Important Competencies for each Competency Category..... 11
3	Competencies with the Lowest Level of Preparedness for each Competency Category . 13
4	Three Largest Mean Weighted Discrepancy Scores for each Competency Category..... 15
5	Three Largest Mean Weighted Discrepancy Scores: Supervisor Only Competencies 17
6	Supervisor vs. Non-Supervisor: Independent T test Mean Comparison of MWDS: Items 2-48..... 18
7	ANOVA Comparison of Mean Importance by GS Level Group 20
8	ANOVA Comparison of Mean Preparation by GS Level Group 22
9	ANOVA Comparison of MWDS by GS Level Group 24
10	Independent T test Mean Comparison of MWDS on Items 49-82 25
11	ANOVA Comparison of Mean MWDS by Years in Current Position..... 26
12	ANOVA Comparison of Mean MWDS by Years in Interpretation and Education 28
13	ANOVA Comparison of Mean MWDS by Generations..... 30
14	Top 7 Training Needs based on Mean Weighted Discrepancy Scores..... 31
 Appendix C	
C-1	Employment History of Study Respondents..... 69
 Appendix D	
D-1	Perceptions of Importance – Audience Experience..... 72
D-2	Perceptions of Importance – Finding and Assessing Knowledge..... 74
D-3	Perceptions of Importance – Appropriate Techniques 76
D-4	Perceptions of Importance – Partnering, Collaboration and Community Outreach 78
D-5	Perceptions of Importance – Planning and Evaluation..... 80
D-6	Perceptions of Importance – Professional Development of Self and Others 82
 Appendix E	
E-1	Perceptions of Preparedness - Audience Experience 86
E-2	Perceptions of Preparedness - Finding and Assessing Knowledge 88
E-3	Perceptions of Preparedness - Appropriate Techniques 91
E-4	Perceptions of Preparedness - Partnering, Collaboration and Community Outreach..... 94
E-5	Perceptions of Preparedness - Planning and Evaluation 95
E-6	Perceptions of Preparedness - Professional Development of Self and Others..... 97

Appendix F

F-1	Mean Weighted Discrepancy Scores – Audience Experience.....	102
F-2	Mean Weighted Discrepancy Scores – Finding and Assessing Knowledge.....	103
F-3	Mean Weighted Discrepancy Scores – Appropriate Techniques.....	105
F-4	Mean Weighted Discrepancy Scores – Partnering, Collaboration and Community Outreach.....	107
F-5	Mean Weighted Discrepancy Scores – Planning and Evaluation.....	108
F-6	Mean Weighted Discrepancy Scores – Professional Development of Self and Others ..	110

Appendix G

G-1	Perceptions of Importance – Partnering, Collaboration and Community Outreach Competencies Pertaining to Supervisors.....	114
G-2	Perceptions of Preparedness – Partnering, Collaboration and Community Outreach Competencies Pertaining to Supervisors.....	115
G-3	Mean Weighted Discrepancy Scores – Partnering, Collaboration and Community Outreach Competencies Pertaining to Supervisors.....	116
G-4	Perceptions of Importance – Planning and Evaluation Competencies Pertaining to Supervisors	117
G-5	Perceptions of Preparedness – Planning and Evaluation Competencies Pertaining to Supervisors	119
G-6	Mean Weighted Discrepancy Scores – Planning and Evaluation Competencies Pertaining to Supervisors.....	120
G-7	Perceptions of Importance – Professional Development of Self and Others Competencies Pertaining to Supervisors.....	121
G-8	Perceptions of Preparedness – Professional Development of Self and Others Competencies Pertaining to Supervisors.....	122
G-9	Mean Weighted Discrepancy Scores – Professional Development of Self and Others Competencies Pertaining to Supervisors.....	123

Appendix H

H-1	Perceptions of Frequency of Participation in Work Related Tasks among Interpretation and Education Employees	127
H-2	Supervisor Perceptions of Frequency of Participation in Work Related Tasks among Interpretation and Education Employees.....	130
H-3	Non-Supervisor Perceptions of Frequency of Participation in Work Related Tasks among Interpretation and Education Employees.....	133
H-4	Perceptions of Preparedness in Engagement/Co-Creation Techniques among Interpretation and Education Employees.....	136

List of Figures

Figure #	Page
1 The percentage of respondents by age group.....	10
2 The percentage of respondents by grade level	10
 Appendix C	
C-1 The percentage of time spent by respondents on interpretation and education job duties	68
C-2 The percentage of respondents in supervisory and non-supervisory roles	68
C-3 The percentage of respondents by highest level of education	69
 Appendix D	
D-1 The five Audience Experience competencies rated by respondents as the most important to their positions	73
D-2 The five Finding and Assessing Knowledge competencies rated by respondents as the most important to their positions	75
D-3 The five Appropriate Techniques competencies rated by respondents as the most important to their positions	78
D-4 The four Partnering, Collaboration and Community Outreach competencies rated by respondents as the most important to their positions	79
D-5 The five Planning and Evaluation competencies rated by respondents as the most important to their positions	81
D-6 The five Professional Development of Self and Others competencies rated by respondents as the most important to their positions	83
 Appendix E	
E-1 The five Audience Experience competencies rated by respondents where they felt least prepared	87
E-2 The five Finding and Assessing Knowledge competencies rated by respondents where they felt least prepared	90
E-3 The five Appropriate Techniques competencies rated by respondents where they felt least prepared	93
E-4 The four Partnering, Collaboration and Community Outreach competencies rated by respondents where they felt least prepared	95
E-5 The five Planning and Evaluation competencies rated by respondents where they felt least prepared	96
E-6 The five Professional Development of Self and Others competencies rated by respondents where they felt least prepared	98

Appendix F

F-1	The five Audience Experience competencies with the largest mean weighted discrepancy scores.....	103
F-2	The five Finding and Assessing Knowledge competencies with the largest mean weighted discrepancy scores.....	104
F-3	The five Appropriate Techniques competencies with the largest mean weighted discrepancy scores.....	106
F-4	The four Partnering, Collaboration and Community Outreach competencies with the largest mean weighted discrepancy scores.....	108
F-5	The five Planning and Evaluation competencies with the largest mean weighted discrepancy scores.....	109
F-6	The five Professional Development of Self and Others competencies with the largest mean weighted discrepancy scores.....	111

Appendix G

G-1	The four Partnering, Collaboration and Community Outreach competencies rated by supervisors as the most important to their positions	114
G-2	The four Partnering, Collaboration and Community Outreach competencies rated by supervisors where they felt least prepared.....	115
G-3	The four Partnering, Collaboration and Community Outreach competencies with the largest mean weighted discrepancy scores.....	117
G-4	The four Planning and Evaluation competencies rated by supervisors as the most important to their positions	118
G-5	The four Planning and Evaluation competencies rated by supervisors where they felt least prepared	119
G-6	The four Planning and Evaluation competencies with the largest mean weighted discrepancy scores.....	120
G-7	The three Professional Development of Self and Others competencies rated by supervisors as the most important to their positions	121
G-8	The three Professional Development of Self and Others competencies rated by supervisors where they felt least prepared.....	122
G-9	The three Professional Development of Self and Others competencies with the largest mean weighted discrepancy scores.....	123

Appendix H

H-1	The five lowest frequencies of participation in tasks by respondents	128
H-2	The five highest frequencies of participation in tasks by respondents	129
H-3	The five lowest frequencies of participation in tasks by supervisors	131
H-4	The five highest frequencies of participation in tasks by supervisors	132
H-5	The five lowest frequencies of participation in tasks by non-supervisors.....	134
H-6	The five highest frequencies of participation in tasks by non-supervisors.....	135
H-7	The five engagement/co-creation techniques rated by respondents where they felt least prepared	137

National Park Service

Interpretation and Education

Education and Training Needs Assessment

Executive Summary

In an effort to identify critical training needs in Interpretation and Education (I&E), a team of subject matter experts from across the National Park Service (NPS) joined professionals from Stephen T. Mather Training Center and Clemson University to develop and then implement a study that investigated how important and how well prepared I&E employees are in fulfilling specific competencies that are relevant and applicable in the 21st century and necessary to perform at the highest levels. The specific goals of this study were: (a) review and revise I&E competencies performed at various levels within the NPS; (b) assess the importance of these competencies to job performance; (c) assess the level of preparedness of employees to perform these competencies; and d) determine the “gaps” existing between the importance assigned to, and perceived preparation to perform, each competency. We calculated a mean weighted discrepancy score to determine this “gap,” which may be used to identify the training needs of the NPS workforce and prioritize future training efforts.

An online survey instrument was developed and then sent to ALL 3,469 NPS employees identified as having Interpretation and Education duties during March and April, 2014. The survey included a list of 80 specific competency questions that corresponded to 6 overarching categories. These categories were: *Audience Experience; Finding and Assessing Knowledge; Appropriate Techniques; Partnering, Collaboration and Community Outreach; Planning and Evaluation; and Professional Development of Self and Others*. At the conclusion of data collection in April, 1,032 respondents returned surveys, resulting in a response rate of 29.7%. Put simply, approximately one-third of all interpretation and education personnel in the NPS responded.

Eighty-nine percent of the respondents reported spending more than 20% of their time on I&E duties. About 70% of respondents hold a GS 9 position or higher. Sixty-eight percent of the respondents were 40 years of age, or older illustrating a significant “graying” trend in I&E staff. Furthermore, they had served for an average of 15 years in the National Park Service and in the I&E field.

In general, the competencies developed by subject matter experts appeared validated by the study population. The level of importance assigned by respondents to each competency item *ranged from 6.61 (very high on the 7-pt scale), to 5.31 (above the midpoint)*. The highest levels of importance were assigned to the category “*Professional Development of Self and Others,*” while the lowest levels of preparedness were associated with the category, *Planning and Evaluation*.

We also calculated a mean weighted discrepancy score (MWDS) for each competency and category of competencies (composite mean score of all items in category). The largest MWDS’s pertained to the category *Audience Experience* and were related to assessing the needs of diverse audiences, engaging the non-visiting audience, and updating interpretive programming based on changing societal trends. However the results also identified several competencies within each category (see Table 4) that could be considered as training priorities, such as the development of skills related to social media and websites (*Appropriate Techniques*), keeping current on interpretive best practices, theories, and changes in the field (*Professional Development of Self and Others*), and planning for and pursuing professional development opportunities (*Professional Development of Self and Others*). Table ES1 lists the 7 competencies with the largest mean weighted discrepancy scores.

Table ES1. Top 7 Training Needs based on Mean Weighted Discrepancy Scores

Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.
Identify and engage non-visiting audiences through using existing and emerging media technologies.
Update interpretive programming based on changing societal trends.
Plan for self-development and continuously pursue professional growth opportunities.
Apply best practices and protocols in developing informational and interpretive content for park websites.
Evaluate effectiveness of interpretive products or services at all stages of development.
Keep current on interpretive best practices, theories and changes in the field of interpretation.

For individuals that identified themselves as having a supervisory position, we investigated 11 additional competencies. These results also identified several critical training needs for supervisors pertaining to finding and using alternative funding to offset costs; developing, implementing and evaluating effectiveness of marketing strategies for interpretation; and providing training based on employee needs and park goals.

Additionally, data were segmented and analyzed to investigate whether different GS levels, experience levels, or age groups have different training needs. These segmentations of data identified targeted training needs. Key results include:

- Lower GS level employees assigned less importance to competencies that may be interpreted as being supervisory in nature such as partnering, collaborating, training, and evaluating.
- More experienced and higher GS level employees assigned greater importance and generally felt less prepared to undertake competencies pertaining to the category *Audience Experience* than less experienced and lower GS level employees.
- Less experienced individuals reported greater training needs in competencies pertaining to *Partnering, Collaboration and Community Outreach*.

Introduction

In an effort to investigate how well employees of the National Park Service (NPS) are prepared to undertake critical tasks that are required to protect our National Parks unimpaired while providing for the enjoyment of the American public, the NPS has periodically assessed the education and training needs of its employees. Typically, this has been accomplished by investigating how important competencies are to job performance and how well prepared employees are to perform these competencies.

This report provides the results of an assessment of NPS employees who have responsibilities in the area of Interpretation and Education (I&E). This is the second “needs assessment” focused on Interpretation and Education undertaken by the NPS, the first of which occurred in 1994. As one can imagine, much has changed since 1994. Beyond identifying the training needs of NPS I&E staff, this effort also provided the opportunity to examine and update the competencies that are needed for I&E to meet the needs of the 21st century public. Subject matter experts (SMEs) reviewed and updated the competencies needed to perform at the highest levels. From these competencies, we developed an online survey that was distributed to all NPS employees that were identified as having Interpretation and Education responsibilities.

Study Purpose

The overarching purpose of this research was to identify the training needs of NPS personnel that have I&E responsibilities. Specifically, the purposes of this study were to:

- (a) review and revise I&E competencies performed at various levels within the NPS;
- (b) assess the importance of these competencies to job performance;
- (c) assess the level of preparedness of employees to perform these competencies; and
- (d) determine the gaps existing between the importance assigned to, and perceived preparation to perform, each competency. We then calculated a diagnostic measure called a mean weighted discrepancy score, which can be used to identify the training needs of the NPS workforce and prioritize future training and education efforts.

This research also allowed for the exploration of additional questions including:

- (e) Do supervisors have different training needs than non-supervisors?
- (f) Do staff with different employment levels (GS) have different training needs?
- (g) Do staff with different years of experience in current position or I&E have different training needs?
- (i) Are there different training needs depending upon age?
- (j) Does amount of time spent on responsibilities related to I&E influence training needs?

Methods

Competency Development

To begin the process of developing competencies, we reviewed the current goals as well as identified emerging goals pertaining to the NPS Interpretation and Education Program. We also reviewed the goals of other organizations that shared similar missions. From this comprehensive review we developed a draft list of potential outcomes for I&E for the 21st century. This process coincided with a parallel effort that generated the NPS Servicewide Interdisciplinary Strategic Plan for Interpretation, Education and Volunteers, which further defined the outcomes for I&E in the 21st century as well as the development of the vision paper Interpretive Skills: 21st Century National Park Service (2014). Once outcomes were defined we began the process of identifying what professional practices lead to these desired outcomes. In other words, we identified which “best practices” that are thought to enhance these visitor outcomes, are also supported in the peer-reviewed literature. This review included over 70 articles pertaining to Interpretation, over 83 articles pertaining to Environmental Education, over 62 articles pertaining to Engagement Strategies, and over 119 articles pertaining to interpreting Climate Change and other controversial and complex issues. For an in depth discussion of these reviews please see:

Skibins, J. C., Powell, R. B., & Stern, M. J. (2012). Linking interpretation best practices with outcomes: A review of literature. *Journal of Interpretation Research*, 17 (1), 25-44.

Stern, M. J., Powell, R. B., & Hill, D. (2013). Environmental education research in the new millennium: What do we measure and what have we learned? *Environmental Education Research*. DOI:10.1080/13504622.2013.838749

Brownlee, M. T. J., Powell, R. B., & Hallo, J. (2013). A review of the foundational processes that influence beliefs in climate change: Opportunities for environmental education research. *Environmental Education Research*. 19 (1) 1-20.

In addition we utilized the findings from a large NPS servicewide research project that identified which programmatic elements and practices lead to better outcomes in live interpretation. This study investigated over 384 live interpretive programs and monitored over 56 programmatic characteristics to establish their link with desired visitor outcomes. The findings of this study are available in a special issue of the Journal of Interpretation Research, Volume 18 (2). The results of this study are divided into 4 articles:

Stern, M. J. & Powell, R. B. (2013). What leads to better visitor outcomes in live interpretation? Special Issue of *Journal of Interpretation Research*, 18 (2), 9-44.

Powell, R. B. & Stern, M. J. (2013a). Is it the program or the interpreter? Modeling the influence of program characteristics and interpreter attributes on visitor outcomes. Special Issue of *Journal of Interpretation Research*, 18 (2), 45-60.

Powell, R. B. & Stern, M. J. (2013b). Speculating on the role of context in the outcomes of interpretive programs. Special Issue of *Journal of Interpretation Research*, 18 (2), 61-78.

Stern, M. J., Powell, R. B., McLean, K. D., Martin, E., Thomsen, J. M. & Mutchler, B. A. (2013). The difference between good enough and great: Bringing interpretive best practices to life. Special Issue of *Journal of Interpretation Research*, 18 (2), 79-100.

In June, 2013 I&E experts from the Stephen T. Mather Training Center met to review the preliminary list of outcomes and “best practices” produced from this review. In Sept., 2013, I&E subject matter experts (SMEs) including the Interpretation and Education Learning and Development Advisory Committee – a broad scope committee including members from professional interpretive organizations and academic institutions, along with NPS field practitioners, Peer Review Certifiers, the Regional Lead Coaching Team, training specialists from Stephen T. Mather Training Center and Clemson University met at the Stephen T. Mather Training Center to review and refine the proposed new outcomes for I&E and the “best practices” thought to produce these outcomes. Finally, this group of I&E practitioners and SME participants reviewed the current list of I&E competencies and began the process of revising and updating. The goal of this process was to produce a list of competencies which would be relevant and applicable in the 21st century and were deemed necessary to perform at high levels within the I&E career field. This group of professional experts ultimately identified six major categories of competencies and developed their operational definitions (below).

Audience Experience: knowing and understanding audiences and reaching out to both visiting and non-visiting publics to create a welcoming, relevant, collaborative experience for all.

Finding and Assessing Knowledge: gathering, synthesizing and assessing resource and subject matter knowledge in order to develop accurate, relevant interpretive content.

Appropriate Techniques: use of appropriate interpretive strategies and techniques to explore the significance and relevance of park resources with diverse audiences.

Partnering, Collaboration and Community Outreach: ability to partner and collaborate on a daily basis working cooperatively, developing networks and building alliances.

Planning and Evaluation: ability to plan and evaluate products and services for multiple outcomes to maximize the desired outcomes for park programming, to meet park and agency missions to identify professional development needs, to achieve visitor satisfaction and to address societal interests.

Professional Development of Self and Others: initiating and facilitating professional development to constantly build new skills and hone interpretive effectiveness for self and others.

Instrument Development

Based on the six categories, the group of experts developed a preliminary list of competencies through collaborative work after the initial meeting. Researchers at Clemson University, in collaboration with the Stephen T. Mather I&E training team then developed a draft online survey instrument. Clemson researchers then conducted a series of pilot tests of the survey using NPS I&E field professionals. Clemson researchers and the I&E training team subsequently adjusted the length and wording of competencies, and made other minor modifications to the survey based on an iterative process of pilot testing, feedback, and peer review with the I&E training team from the Stephen T. Mather Training Center and field collaborators/practitioners. The final instrument included six broad categories (aka technical competencies) and 80 corresponding specific competencies. Respondents were asked to rate the importance, and perceived preparation to perform:

- 16 competencies pertaining to ***Audience Experience***
- 12 competencies pertaining to ***Finding and Assessing Knowledge***
- 19 competencies pertaining to ***Appropriate Techniques***
- 8competencies pertaining to ***Partnering, Collaboration and Community Outreach (4 of which were asked only of supervisors)***
- 11 competencies pertaining to ***Planning and Evaluation (4 of which were asked only of supervisors)***
- 15 competencies pertaining to ***Professional Development of Self and Others (3 of which were asked only of supervisors)***

Sample and Data Collection

An e-mail from Julia Washburn, the Associate Director for Interpretation, Education and Volunteers, was sent to **ALL** 3,469 NPS employees designated as having I&E responsibilities on March 19, 2014. These I&E employees were asked to complete the online survey as part of their normal duty day. Three follow-up e-mail reminders were sent to all I&E employees on March 31, 2014, April 14, 2014 and April 21, 2014 following recommendations by Dillman (2009). Data collection ceased on April 28, 2014. It is important to note that most seasonal employees were not on duty/employed during March and April and therefore a representative population of seasonal employees was not captured.

Response Rate

At the conclusion of data collection, 1,032 respondents returned surveys with usable data, resulting in an effective response rate of 29.7%. Put simply, approximately one-third of all interpretation and education personnel in the NPS responded.

Data Analyses

Data were analyzed utilizing IBM SPSS Statistics 20, the Statistical Package for Social Sciences. Frequency distributions and descriptive statistics were reported in aggregate for all variables. Table 2 reports the mean importance assigned to each competency, and Table 3 reports the mean preparation to perform each competency. Table 4 reports the mean weighted discrepancy scores (MWDS). This statistic was computed *for each individual* utilizing the formula $((\text{Preparedness} - \text{Importance}) * \text{Importance Grand Mean})$ (see Robinson & Garton, 2008; Edwards & Briers, 1999; Bullard et. al, 2013). Subsequently, a mean weighted discrepancy score was computed and reported. This mean weighted discrepancy score is used to identify the largest training needs and measures the “gap” between importance and preparedness while also taking into account the overall importance of a competency as reported by the total number of respondents.

In the results section we report the mean score and frequency distribution for each individual competency because it represents a particular skill or action that is relevant to job performance. We also report an aggregate score or additive composite score for each “category” of competencies, which is comprised of the mean of all items within that category. To address additional questions, we used several different statistical analyses. When comparing mean scores of groups, we used two different tests, an independent samples T test and one way analysis of variance (ANOVA). To aid in interpreting results, we provide *p values and Cohen’s d*. *P values* reflect the likelihood that a result, in this case that the means are statistically different, occurred by chance. A *p value* of less than .05 suggests that there is less than a 5% probability that the result occurred by chance, often referred to as being a “statistically significant” finding. To facilitate interpretation of mean comparisons, we also calculated *Cohen’s d* for each statistically significant result. *Cohen’s d* is an effect size measure that provides an assessment of the meaningfulness of the difference between groups. Meaningful differences begin near 0.2, which may be considered small, while those approaching 0.5 are considered medium, and 0.8 large. In other cases we used correlation analysis to investigate the relationship between characteristics of respondents and particular competencies or categories of competencies. To assess the strength of those relationships, we report the *r and p value*. The closer the *r value* is to 1 or -1, the stronger the relationship. The *p value* can be interpreted as described above.

Results

Description of Study Participants

One thousand and thirty two NPS employees responded to the survey. A large majority (89%) of respondents spend more than 20% of their time on interpretation and education responsibilities.

The majority of respondents identified themselves as non-supervisors (62%). Study participants were well educated; 94% of respondents had a college degree. Close to half (42.3%) had an advanced degree.

The respondents' age range spans from 22 to 78 years of age. Almost half of participants (46.5%) were 50 years of age or older. This indicates that a large portion of the interpretation and education workforce is nearing retirement.

Table 1. Summary of the Demographics (N=1032)

Demographic	Frequencies				Mean	Standard Deviation
Age	18-29	30-39	40-49	50+	46	11.85
	10.3%	21.7%	21.5%	46.5%		
Age (by generation)	Millenials (0-34)	Generation X (35-49)	Baby Boomers (50+)		46	11.85
	19.8%	33.7%	46.5%			
Education	AA/AS or Less	BA/BS	MA/MS	PhD		
	6%	51.7%	39.2%	3.1%		
Grade (GS) Level	GS 3-7	GS 9+	Volunteer			
	30%	69.8%	0.2%			
Management vs. Field	Supervisory	Non-Supervisory				
	38%	62%				
Time Spent on I&E	Less than 20%	More than 20%				
	11%	89%				
# of Years in Position					7.48	7.28
# of Years in I&E					15.56	10.34
# of Years in NPS					15.0	10.21

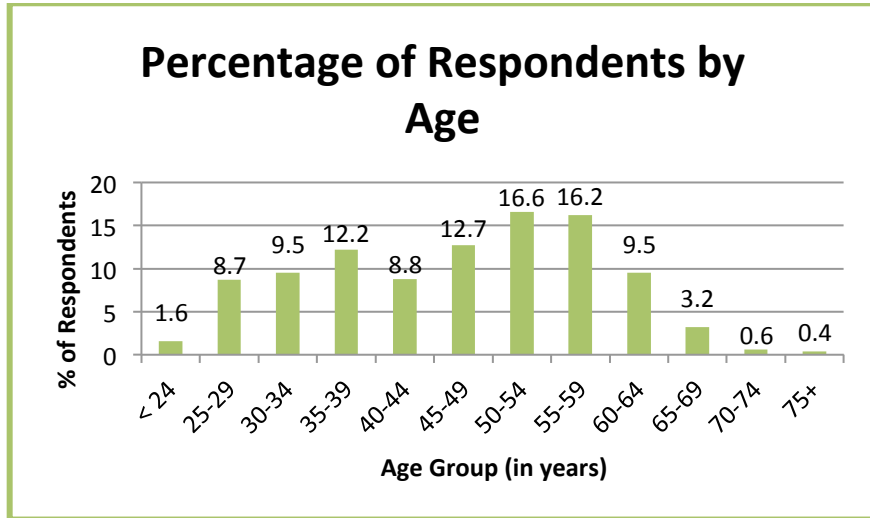


Figure 1. The percentage of respondents by age group.

Respondents spent 15.03 years on average in the National Park Service and an average of 15.56 years in the interpretation and education field. Thus, many respondents have worked in interpretation and education for a big portion of their National Park Service careers. Respondents reported holding their current position an average of 7.53 years. About 70% of respondents reported holding a GS 9 position or higher.

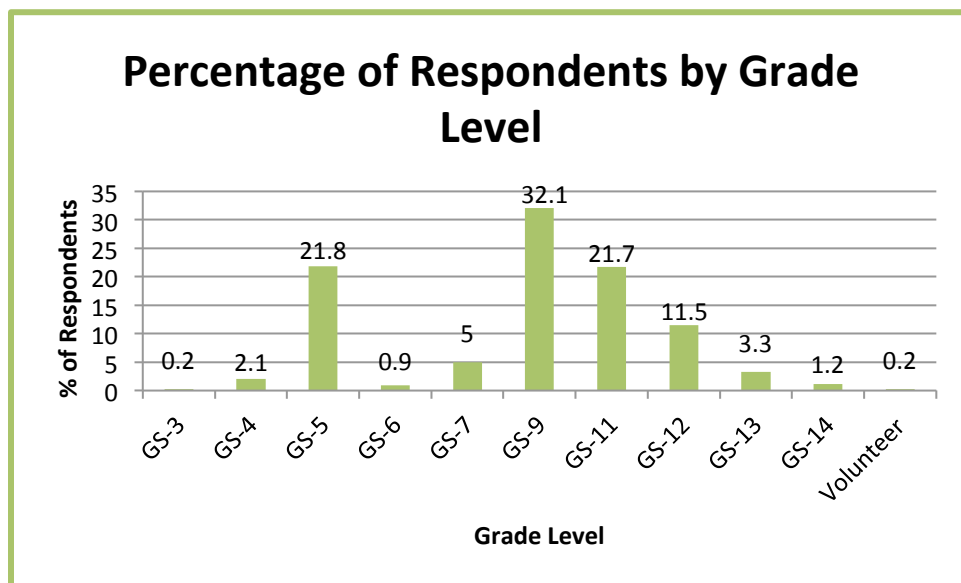


Figure 2. The percentage of respondents by grade level.

Importance Assigned to Interpretation and Education Competencies

All of the competencies were ranked on a scale from 1 (unimportant) to 7 (extremely important). The results suggest that all competencies were relatively important with all ranked above the midpoint (4) with mean scores ranging from a high of 6.61 to a low of 5.31 (see Appendix D for full results). Table 2 reports the three most important competencies for each competency category, their mean score, and distribution of responses.

Table 2. Top Three Most Important Competencies for each Competency Category

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
<i>Audience Experience</i>								5.92	1.31
(10) Display professional, open and patient demeanor in all audience interactions in order to provide excellent customer service.	0.8	0.7	0.9	1.3	2.3	18.0	75.9	6.61	0.93
(13) Display a genuine interest in and respect for the diversity of audience experiences and input.	0.8	0.9	1.2	2.5	7.3	26.6	60.6	6.37	1.06
(4) Explore the relevance that park resources have for different audiences.	1.1	1.1	1.9	5.1	11.7	29.6	49.4	6.12	1.20
<i>Finding and Assessing Knowledge</i>								5.92	1.34
(26) Articulate complex concepts in layman's terms without using jargon or losing accuracy.	0.7	0.3	1.0	2.6	7.2	27.6	60.5	6.40	0.97
(21) Acknowledge history and science as processes of continual revision by updating a site's stories and relevance through research.	1.4	1.7	2.2	5.8	9.4	27.9	51.7	6.11	1.28
(23) Connect historical events with broader cultural and historical trends.	1.0	0.9	2.2	5.5	12.6	30.4	47.2	6.08	1.19
<i>Appropriate Techniques</i>								5.90	1.47
(32) Use interpretive techniques to intentionally craft opportunities for both intellectual and emotional connections to resource meanings.	2.1	0.9	1.5	2.3	8.4	25.8	59.0	6.27	1.23
(38) Provide appropriate types of orientation, information and audience-centered interpretation in informal visitor contacts.	2.2	1.3	1.5	2.9	8.8	22.5	60.8	6.26	1.28
(30) Select interpretive techniques and content to meet the goals and desired outcomes of the park/site.	2.1	0.3	1.6	3.3	9.2	25.9	57.6	6.25	1.21

Partnering, Collaboration and Community Outreach									5.80	1.50
(52)	Build a trusting relationship with partners by facilitating open dialogue.	2.3	1.4	2.3	4.4	10.5	28.6	50.4	6.07	1.34
(54)	Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	3.8	3.5	3.6	6.4	12.4	29.3	41.1	5.72	1.60
(53)	Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	4.7	2.8	2.3	7.0	14.0	28.0	41.1	5.71	1.61
Planning and Evaluation									5.79	1.53
(57)	Prioritize and align interpretative and education products and services with division, park and agency goals and objectives.	2.5	2.2	1.3	4.6	13.6	30.0	45.8	5.98	1.37
(59)	Collaborate with colleagues, subject matter experts, partners, potential audience members and other stakeholders during planning and development of all interpretive and educational products and services.	1.8	2.2	3.0	6.3	11.6	30.7	44.3	5.93	1.37
(66)	Apply results of formal and informal evaluation to ensure programming meets desired outcomes.	3.0	2.4	2.0	6.1	13.0	30.9	42.6	5.87	1.45
Professional Development of Self and Others									6.07	1.26
(81)	Practice effective listening and communication skills to provide constructive feedback.	1.4	0.7	1.7	2.7	8.5	26.9	58.1	6.29	1.14
(79)	Use feedback to improve personal performance.	1.0	0.2	1.4	4.0	9.2	28.4	55.8	6.28	1.07
(76)	Foster an environment of interpersonal trust, and open conversations where peers share insights and feedback.	1.1	0.9	1.4	4.1	9.8	28.1	54.6	6.23	1.15

Level of Preparedness Assigned to Interpretation and Education Competencies

Preparedness was ranked on a scale from 1 (unprepared) to 7 (extremely well prepared). The lowest mean was 3.99 suggesting that respondents felt somewhat prepared for all of the competencies surveyed. The competency category with the lowest preparedness mean (4.69) was *Planning and Evaluation*. Table 3 reports the means and distribution of responses for the three competencies in each competency category where respondents felt the least prepared.

Table 3. Competencies with the Lowest Level of Preparedness for each Competency Category

Interpretation & Education Preparedness		N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
Audience Experience										4.78	1.59
(9)	Identify and engage non-visiting audiences through using existing and emerging media technologies.	5.7	7.5	14.0	15.5	19.7	17.8	12.6	7.3	3.99	1.70
(8)	Identify and engage non-visiting audiences through community outreach efforts.	4.5	7.0	10.9	13.6	18.0	19.5	16.9	9.6	4.27	1.73
(6)	Apply principles of current learning theory to engage audience members of different developmental stages.	3.6	7.5	9.6	14.7	20.0	16.9	17.2	10.4	4.27	1.74
Finding and Assessing Knowledge										4.94	1.58
(28)	Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource.	5.1	6.4	8.7	13.5	20.2	21.5	16.2	8.5	4.31	1.65
(29)	Facilitate experiences where visitors can investigate ways to create a healthier natural and cultural environment.	5.2	5.1	9.0	14.5	18.3	21.3	16.8	9.7	4.38	1.65
(20)	Identify and illuminate embedded biases in historical and scientific data and documents.	2.8	5.4	7.2	12.6	17.3	21.1	20.4	13.2	4.60	1.69

Appropriate Techniques									5.04	1.59
(41) Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium.	10.0	8.7	10.3	13.2	18.0	17.3	14.1	8.4	4.12	1.77
(42) Apply best practices and protocols in developing informational and interpretive content for park websites.	11.7	8.3	8.6	12.4	17.2	18.5	14.5	8.8	4.22	1.76
(44) Emphasize discovery techniques and the Socratic method in education and interpretive programs.	9.4	8.0	8.1	11.4	17.1	18.4	14.8	12.8	4.38	1.81
Partnering, Collaboration and Community Outreach									4.88	1.67
(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	6.6	4.2	7.9	10.0	15.5	20.4	19.2	16.3	4.74	1.71
(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project.	4.1	3.6	6.5	9.8	15.9	20.4	23.4	16.2	4.86	1.64
(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	6.7	4.0	6.1	11.0	15.0	18.2	20.0	19.1	4.86	1.64
Planning and Evaluation									4.69	1.77
(62) Analyze costs and benefits as part of prioritizing programming and allocating resources.	12.0	9.4	10.1	11.6	18.2	16.6	12.0	10.1	4.12	1.82
(63) Evaluate effectiveness of interpretive products or services at all stages of development.	7.2	7.1	9.1	11.0	17.9	19.5	15.6	12.6	4.41	1.77
(67) Identify training needs of staff, volunteers and partners based on results of evaluation.	11.1	6.0	9.5	11.5	15.4	19.4	15.8	11.3	4.41	1.75

Professional Development of Self and Others									4.94	1.62
(70) Develop and experiment with new interpretive techniques.	3.0	4.5	6.7	11.4	20.8	21.4	18.7	13.7	4.64	1.63
(68) Plan for self-development and continuously pursue professional growth opportunities.	1.4	5.6	8.8	10.5	16.0	21.9	20.0	15.7	4.65	1.74
(69) Keep current on interpretive best practices, theories and changes in the field of interpretation.	2.2	4.3	8.5	10.9	16.9	22.8	19.9	14.6	4.67	1.67

Mean Weighted Discrepancy Scores for each Interpretation and Education Competency Category

In Table 4, the three largest mean weighted discrepancy scores are reported for each competency category. This mean weighted discrepancy score (MWDS) was computed *for each individual* utilizing the formula $((\text{Preparedness} - \text{Importance}) * \text{Importance Grand Mean})$ (Robinson & Garton, 2008; Edwards & Briers, 1999; Bullard et. al, 2013). Subsequently, a MWDS was computed and reported. This mean weighted discrepancy score is used to identify training needs and measures the “gap” between importance and preparedness while also taking into account the overall importance of a competency as reported by the total number of respondents. The MWDS is therefore weighted by the overall importance assigned to a competency and is considered more robust than simply using the mean difference between importance and preparedness.

Table 4. Three Largest Mean Weighted Discrepancy Scores for each Competency Category

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
Audience Experience	5.92	4.78	-7.08	10.11
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	6.06	4.35	-10.60	10.94
(9) Identify and engage non-visiting audiences through using existing and emerging media technologies.	5.64	3.99	-9.89	11.29
(15) Update interpretive programming based on changing societal trends.	5.89	4.29	-9.89	11.35

<i>Finding and Assessing Knowledge</i>		5.92	4.94	-6.30	9.65
(21)	Acknowledge history and science as processes of continual revision by updating a site's stories and relevance through research.	6.11	4.93	-7.68	10.39
(20)	Identify and illuminate embedded biases in historical and scientific data and documents.	5.81	4.60	-7.53	9.89
(19)	Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research.	6.05	4.87	-7.49	10.19
<i>Appropriate Techniques</i>		5.90	5.04	-5.87	9.83
(42)	Apply best practices and protocols in developing informational and interpretive content for park websites.	5.60	4.22	-9.09	11.20
(48)	Comply with technical and legal standards in developing programs and media (NPS editorial guidelines, accessibility mandates, copyright, intellectual property, etc.).	5.96	4.60	-8.76	11.15
(41)	Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium.	5.45	4.12	-8.50	11.08
<i>Partnering, Collaboration and Community Outreach</i>		5.94	4.72	-6.05	10.34
(52)	Build a trusting relationship with partners by facilitating open dialogue.	6.07	5.07	-6.57	10.78
(54)	Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	5.72	4.74	-6.45	10.30
(53)	Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	5.71	4.86	-5.93	10.59
<i>Planning and Evaluation</i>		5.83	4.55	-7.02	11.09
(63)	Evaluate effectiveness of interpretive products or services at all stages of development.	5.83	4.41	-9.06	11.55
(67)	Identify training needs of staff, volunteers and partners based on results of evaluation.	5.73	4.41	-8.89	11.69
(62)	Analyze costs and benefits as part of prioritizing programming and allocating resources.	5.45	4.12	-8.57	10.69
<i>Professional Development of Self and Others</i>		6.07	4.87	-7.13	10.55
(68)	Plan for self-development and continuously pursue professional growth opportunities.	6.19	4.65	-9.61	11.99
(69)	Keep current on interpretive best practices, theories and changes in the field of interpretation.	6.09	4.67	-9.02	10.92
(70)	Develop and experiment with new interpretive techniques.	5.86	4.64	-7.71	10.44

Appropriate Techniques exhibited the lowest mean weighted discrepancy score (-5.87) whereas *Professional Development of Self and Others* had the largest (-7.13). The three largest MWDSs were *Audience Experience* competencies. Competency item number 3, which concerns

assessing the needs of diverse audiences had a MWDS of -10.60. Items 9 and 15 both had a MWDS of -9.89 and pertained to the use of media technologies for reaching non-visiting audiences and updating programming to coincide with changes in society.

Mean Weighted Discrepancy Scores: Supervisors' Interpretation and Education Competencies

In this study, there were 11 competencies that pertained to supervisors that fell under three different competency categories (Table 5 and Appendix G). Respondents who reported that they had a supervisor position ranked these items on importance and preparedness. Non-supervisors were not given the opportunity to rank these items. Table 5 reports the three largest mean weighted discrepancy scores ((Preparedness - Importance)* Importance Grand Mean)(Robinson & Garton, 2008; Edwards & Briers, 1999; Bullard et al., 2013) for “supervisor-only” competency items. The largest MWDS (-13.94) pertains to item number 55, which is the ability to find and use alternative funding to offset costs. Another large MWDS (-12.79), number 66, pertains to marketing interpretation. The MWDS for the three competency categories were all around -9.

Table 5. Three Largest Mean Weighted Discrepancy Scores: Supervisor Only Competencies

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
<i>Partnering, Collaboration and Community Outreach</i>	5.94	4.72	-9.54	10.76
(55) Find and use alternative funding to offset costs.	6.12	3.91	-13.94	12.63
(56) Regularly assess partnerships to ensure mutual effectiveness.	6.01	4.39	-10.10	10.42
(51) Collaborate with a wide variety of stakeholders to craft interpretive goals that mutually benefit the park, agency, audience and broader community.	5.99	4.82	-7.37	10.15
<i>Planning and Evaluation</i>	5.83	4.55	-9.77	10.63
(61) Develop, implement and evaluate effectiveness of marketing strategies for interpretation.	5.69	3.57	-12.79	10.46
(64) Partner with qualified specialists to evaluate interpretation.	5.53	3.87	-9.46	10.88
(60) Strategically plan and develop an array of program and media services to allow audience experiences to complement or build upon one another.	6.05	4.57	-9.25	10.14
<i>Professional Development of Self and Others</i>	6.07	4.87	-9.38	10.20
(74) Provide training based on employee needs and park goals.	6.38	4.76	-10.55	10.66
(73) Collaborate with local and national trainers to identify employees' training needs.	5.63	4.04	-9.19	9.96
(75) Provide effective interpretive training by applying knowledge of both training methods and interpretive theory.	6.23	4.97	-8.39	9.99

Do supervisors have different training needs than non-supervisors?

Sixty-two percent of respondents reported that they held a non-supervisory position. To explore whether supervisors and non-supervisors have different training needs, we compared the mean MWDS of each group on competencies pertaining to *Audience Experience*, *Finding and Assessing Knowledge*, and *Appropriate Techniques*. In the *Audience Experience* category, supervisors reported significantly greater degrees of importance and less preparedness on 9 competencies as evidenced by the significant differences in mean weighted discrepancy scores. In the *Finding and Assessing Knowledge* category, supervisors had significantly greater mean weighted discrepancy scores on 5 competencies. In the *Appropriate Techniques* category, supervisors reported significantly greater mean weighted discrepancy scores on 7 competencies. However all of these results should be interpreted cautiously. Based on the Cohen's d scores, most of these differences could be interpreted as statistically significant but *inconsequential or minor* (Cohen's d scores of less than .2 are possibly an artifact of sample size) or considered relatively small (Cohen's d scores between .2-.49).

Table 6. Supervisor vs. Non-Supervisor: Independent T test Mean Comparison of MWDS: Items 2-48

	Supervisor	Non-Supervisor				
Competencies	Mean (SD)	Mean (SD)	df	t	p	Cohen's d
<i>Audience Experience Composite</i>	-8.05 (5.94)	-6.35 (7.52)	842	-3.76	.000	0.25
(2) Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.	-10.10 (9.48)	-6.39 (10.05)	868	-5.43	.000	0.38
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	-13.06 (10.35)	-9.13 (10.93)	875	-5.28	.000	0.37
(4) Explore the relevance that park resources have for different audiences.	-10.34 (9.78)	-7.55 (10.25)	883	-4.01	.000	0.28
(5) Plan interpretation based on knowledge of specific audiences.	-8.15 (9.92)	-6.11 (10.40)	872	-2.86	.004	0.20
(9) Identify and engage non-visiting audiences through using existing and emerging media technologies.	-11.47 (10.48)	-8.86 (11.92)	828	-3.23	.001	0.23
(11) Facilitate collaborative learning by encouraging audiences to participate and contribute to their interpretive experiences.	-7.18 (9.07)	-5.01 (9.84)	857	-3.23	.001	0.23
(12) Encourage visitors to safely express personal viewpoints and hear the perspectives of others.	-6.08 (9.06)	-4.63 (9.89)	854	-2.14	.032	0.15
(14) Resolve conflicts through empathy and diplomacy.	-6.84 (9.19)	-4.95 (10.27)	859	-2.73	.006	0.19
(15) Update interpretive programming based on changing societal trends.	-12.07 (11.11)	-8.69 (11.26)	839	-4.27	.000	0.30

<i>Finding and Assessing Knowledge Composite</i>	-6.99 (6.54)	-5.94 (7.88)	789	-2.11	.035	0.15
(20) Identify and illuminate embedded biases in historical and scientific data and documents.	-8.50 (9.03)	-7.06 (10.16)	842	-2.09	.037	0.15
(21) Acknowledge history and science as processes of continual revision by updating a site's stories and relevance through research.	-8.68 (9.60)	-7.02 (10.67)	843	-2.28	.023	0.16
(23) Connect historical events with broader cultural and historical trends.	-6.53 (9.36)	-5.07 (9.48)	855	-2.20	.028	0.15
(28) Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource.	-8.01 (8.84)	-6.41 (9.74)	824	-2.37	.018	0.17
(29) Facilitate experiences where visitors can investigate ways to create a healthier natural and cultural environment.	-8.48 (9.18)	-6.63 (9.90)	819	-2.67	.008	0.19
<i>Appropriate Techniques Composite</i>	-6.23 (6.60)	-5.56 (7.38)	754	-1.40	.164	0.10
(34) Plan for logistical issues and skillfully manage groups to enhance audience experience and protect resources and visitors.	-3.13 (8.84)	-4.53 (9.21)	836	2.17	.030	-0.16
(40) Design traditional and digital media to use interpretive principles.	-7.82 (9.34)	-6.36 (10.88)	786	-1.96	.050	0.14
(41) Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium.	-9.89 (10.31)	-7.71 (11.56)	780	-2.70	.007	0.20
(42) Apply best practices and protocols in developing informational and interpretive content for park websites.	-10.16 (10.80)	-8.34 (11.65)	758	-2.17	.030	0.16
(46) Use facilitation and dialogue skills to foster a respectful and proactive exchange of thoughts and ideas.	-7.47 (9.52)	-5.90 (10.53)	834	-2.18	.030	0.16
(47) Use techniques that foster citizenship skills (such as critical thinking, problem-solving, informed decision making, collaboration and respectful dialogue).	-7.97 (9.46)	-5.95 (10.47)	831	-2.81	.005	0.20
(48) Comply with technical and legal standards in developing programs and media (NPS editorial guidelines, accessibility mandates, copyright, intellectual property, etc.).	-9.93 (10.42)	-8.02 (11.46)	829	-2.41	.016	0.17

Do staff with different employment levels (GS) place different levels of importance on different competencies?

To answer this question we developed 3 groups based on GS level: GS 0-6 (frontline employees), GS 7-9 (experienced front line and mid level management), and GS 10 and greater. There were 216 (25%) in the GS 0-6 group, 319 (37%) in GS 7-9, and 324 in the GS 10-15 group (38%). We then compared the three groups' mean scores on level of importance pertaining to

each competency and composite category using one-way analysis of variance (ANOVA) with a post hoc comparison. In Table 7, only competencies that had significantly different mean scores in importance are reported. To interpret the statistics in the table, first examine the mean scores of each group. The p value under the ANOVA heading indicates whether the three mean scores are significantly different. The post hoc analysis column reports the direction of significant differences in mean scores between the three groups, the p value of that relationship denoted by *, and the Cohen's d (effect size). Generally the findings suggest that partnering skills, and planning and evaluation skills are more important to higher GS level employees.

Table 7. ANOVA Comparison of Mean Importance by GS Level Group

	GS 0-6 (1)	GS 7-9 (2)	GS 10-15 (3)	ANOVA			Post Hoc (Cohen's d)
Competencies	<u>M</u> (SD)	<u>M</u> (SD)	<u>M</u> (SD)	F	(df)	p	
<i>Partnering, Collaboration and Community Outreach Importance Composite</i>	5.47 (1.62)	5.86 (1.24)	6.03 (0.96)	12.61	(2, 826)	.000	1<2** (-.27) 1<3*** (-.42)
(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.	5.36 (1.69)	5.73 (1.34)	5.95 (1.19)	11.29	(2, 821)	.000	1<2** (-.24) 1<3*** (-.40)
(52) Build a trusting relationship with partners by facilitating open dialogue.	5.71 (1.70)	6.07 (1.29)	6.38 (0.92)	16.47	(2, 822)	.000	1<2** (-.24) 1<3*** (-.49) 2<3* (-.28)
(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	5.44 (1.85)	5.86 (1.52)	5.86 (1.39)	5.63	(2, 820)	.004	1<2** (-.25) 1<3** (-.26)
(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	5.36 (1.94)	5.79 (1.48)	5.93 (1.39)	8.42	(2, 816)	.000	1<2** (-.25) 1<3*** (-.34)
<i>Planning and Evaluation Importance Composite</i>	5.53 (1.41)	5.74 (1.30)	6.04 (1.01)	11.14	(2, 840)	.000	1<3*** (-.42) 2<3** (-.26)
(57) Prioritize and align interpretative and education products and services with division, park and agency goals and objectives.	5.72 (1.53)	5.96 (1.32)	6.21 (1.23)	8.56	(2, 837)	.000	1<3*** (-.35)

(59)	Collaborate with colleagues, subject matter experts, partners, potential audience members and other stakeholders during planning and development of all interpretive and educational products and services.	5.78 (1.48)	5.87 (1.44)	6.15 (1.13)	5.65	(2, 837)	.004	1<3** (-.28) 2<3* (-.22)
(62)	Analyze costs and benefits as part of prioritizing programming and allocating resources.	4.87 (2.13)	5.36 (1.86)	5.96 (1.26)	25.55	(2, 837)	.000	1<2** (-.25) 1<3*** (-.62) 2<3*** (-.38)
(63)	Evaluate effectiveness of interpretive products or services at all stages of development.	5.63 (1.66)	5.82 (1.47)	5.99 (1.32)	3.73	(2, 833)	.024	1<3* (-.24)
(65)	Foster an environment conducive for routine, informal, peer-driven evaluation.	5.57 (1.65)	5.71 (1.56)	5.95 (1.33)	4.35	(2, 837)	.013	1<3* (-.25)
(66)	Apply results of formal and informal evaluation to ensure programming meets desired outcomes.	5.64 (1.65)	5.82 (1.49)	6.09 (1.20)	6.61	(2, 829)	.001	1<3*** (-.31)
(67)	Identify training needs of staff, volunteers and partners based on results of evaluation.	5.53 (1.94)	5.71 (1.73)	5.92 (1.48)	3.55	(2, 831)	.029	1<3* (-.23)

*p<.05 **p<.01 ***p<.001

Do staff with different employment levels (GS) report different levels of preparedness on different competencies?

To answer this question we developed 3 groups based on GS level: GS 0-6 (frontline employees), GS 7-9 (experienced front line and mid level management), and GS 10 and greater (supervisors). We then compared the three groups' mean scores on level of preparedness pertaining to each competency and composite category using one-way analysis of variance (ANOVA) with a post hoc comparison. In Table 8, only competencies that had significantly different mean scores in preparedness are reported. The results suggest that the GS 10-15 feel they are less prepared to undertake 9 competencies pertaining to *Audience Experience* than lower GS level groups. The results also suggest that the GS 10-15 group felt more prepared than the GS 0-6 group to undertake 4 competencies pertaining to *Partnering, Collaboration and Community Outreach* and 2 competencies pertaining to *Planning and Evaluation*.

Table 8. ANOVA Comparison of Mean Preparation by GS Level Group

	GS 0-6 (1)	GS 7-9 (2)	GS 10-15 (3)	ANOVA			Post Hoc (Cohen's d)
				F	(df)	p	
Competencies	M (SD)	M (SD)	M (SD)				
<i>Audience Experience Composite</i>	4.92 (1.19)	4.84 (1.12)	4.63 (1.04)	4.81	(2, 839)	.008	1>3* (.26)
(2) Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.	4.59 (1.70)	4.28 (1.66)	4.10 (1.57)	5.57	(2, 821)	.004	1>3** (.30)
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	4.69 (1.64)	4.48 (1.69)	3.94 (1.58)	15.61	(2, 829)	.000	1>3*** (.47) 2>3*** (.33)
(4) Explore the relevance that park resources have for different audiences.	5.02 (1.47)	4.76 (1.55)	4.49 (1.55)	7.67	(2, 830)	.001	1>3*** (.35)
(5) Plan interpretation based on knowledge of specific audiences.	5.00 (1.62)	5.00 (1.53)	4.63 (1.57)	5.47	(2, 821)	.004	1>3* (.23) 2>3** (.24)
(7) Adapt interpretation as needed to meet the physical, emotional, cultural and cognitive needs of audience members.	4.92 (1.68)	4.97 (1.54)	4.49 (1.57)	8.09	(2, 819)	.000	1>3** (.26) 2>3*** (.31)
(10) Display professional, open and patient demeanor in all audience interactions in order to provide excellent customer service.	6.28 (1.17)	6.32 (0.93)	6.09 (1.22)	3.66	(2, 822)	.026	2>3* (.21)
(11) Facilitate collaborative learning by encouraging audiences to participate and contribute to their interpretive experiences.	5.23 (1.56)	5.17 (1.51)	4.85 (1.58)	4.92	(2, 817)	.008	1>3* (.24) 2>3* (.21)
(13) Display a genuine interest in and respect for the diversity of audience experiences and input.	5.78 (1.34)	5.70 (1.37)	5.44 (1.51)	4.24	(2, 815)	.015	1>3* (.24)
(15) Update interpretive programming based on changing societal trends.	4.53 (1.79)	4.23 (1.64)	4.13 (1.57)	3.56	(2, 802)	.029	1>3* (.24)
<i>Partnering, Collaboration and Community Outreach Preparedness Composite</i>	4.47 (1.68)	4.88 (1.46)	5.15 (1.37)	12.91	(2, 812)	.000	1<2** (-.26) 1<3*** (-.44)
(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.	4.55 (1.81)	4.87 (1.58)	5.09 (1.57)	6.48	(2, 789)	.002	1<3*** (-.32)
(52) Build a trusting relationship with partners by facilitating open dialogue.	4.79 (1.84)	5.08 (1.60)	5.35 (1.56)	6.94	(2, 791)	.001	1<3*** (-.33)

(53)	Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	4.43 (1.81)	4.89 (1.69)	5.12 (1.60)	9.78	(2, 772)	.000	1<2** (-.26) 1<3*** (-.40)
(54)	Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	4.34 (1.86)	4.71 (1.68)	5.07 (1.56)	10.80	(2, 769)	.000	1<3*** (-.43)
Planning and Evaluation Preparation Composite		4.42 (1.73)	4.61 (1.41)	4.79 (1.41)	3.90	(2, 842)	.021	1<3* (-.12)
(57)	Prioritize and align interpretative and education products and services with division, park and agency goals and objectives.	5.30 (2.27)	5.71 (1.81)	6.07 (1.71)	10.37	(2, 838)	.000	1<2* (-.20) 1<3*** (-.38)
(59)	Collaborate with colleagues, subject matter experts, partners, potential audience members and other stakeholders during planning and development of all interpretive and educational products and services.	4.78 (1.76)	4.85 (1.64)	5.18 (1.46)	4.97	(2, 800)	.007	1<3* (-.25) 2<3* (-.21)

*p<.05 **p<.01 ***p<.001

Do staff with different employment levels (GS) have different training needs (indicated by mean MWDS)?

To answer this question we developed 3 groups based on GS level: GS 0-6 (frontline employees), GS 7-9 (experienced front line and mid level management), and GS 10 and greater (supervisors). We then compared the three groups' MWDS pertaining to each competency and composite category using one-way analysis of variance (ANOVA) with a post hoc comparison. In Table 9, only competencies that had significantly different MWDS are reported. The results suggest that the GS 10-15 group had significantly larger mean weighted discrepancy scores in 7 competencies pertaining to *Audience Experience* than lower GS level groups. In particular, the competency: "Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures," had the highest MWDS for the GS 10-15 group and the largest Cohen's d effect size (medium).

Table 9. ANOVA Comparison of MWDS by GS Level Group

	GS 0-6 (1)	GS 7-9 (2)	GS 10-15 (3)	ANOVA			Post Hoc (cohen's d)
Competencies	M (SD)	M (SD)	M (SD)	F	(df)	p	
<i>Audience Experience MWDS Composite</i>	-6.11 (7.42)	-6.72 (6.96)	-8.13 (6.64)	6.10	(2, 839)	.002	1>3** (.28) 2>3* (.21)
(2) Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.	-5.80 (9.50)	-8.17 (10.31)	-9.48 (9.95)	8.44	(2, 820)	.000	1>2* (-.20) 1>3*** (-.38)
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	-7.88 (10.29)	-9.80 (11.12)	-13.52 (10.63)	19.25	(2, 828)	.000	1>3*** (-.54) 2>3*** (-.34)
(4) Explore the relevance that park resources have for different audiences.	-7.03 (9.68)	-8.35 (10.49)	-10.32 (10.50)	6.85	(2, 830)	.001	1>3*** (-.33) 2>3* (-.19)
(5) Plan interpretation based on knowledge of specific audiences.	-5.69 (10.26)	-5.82 (10.03)	-8.67 (10.42)	7.79	(2, 820)	.000	1>3** (-.29) 2>3** (-.28)
(7) Adapt interpretation as needed to meet the physical, emotional, cultural and cognitive needs of audience members.	-7.45 (10.65)	-7.17 (9.81)	-9.27 (10.57)	3.63	(2, 818)	.027	2>3* (-.21)
(9) Identify and engage non-visiting audiences through using existing and emerging media technologies.	-7.87 (12.19)	-9.15 (11.38)	-11.76 (10.46)	7.93	(2, 786)	.000	1>3*** (-.34) 2>3* (-.24)
(15) Update interpretive programming based on changing societal trends.	-7.68 (12.03)	-9.90 (11.24)	-11.86 (10.56)	8.49	(2, 799)	.000	1>3*** (-.37)

*p<.05 **p<.01 ***p<.001

Do GS 0-9 employees have different training needs than GS 10-15 employees?

To answer this question we compared the two group's mean weighted discrepancy scores (MWDS) for items 49-82. There were 535 (62%) in the GS 0-9 group and 319 (38%) in the GS 10-15 group. Table 10 presents the significant differences. The two groups significantly differed on 4 competencies, however only one had an effect size above the threshold of .2 (small). The GS 0-9 group had a larger MWDS for "representing the interpretive division in broader park planning and management." It is important to note that this was a supervisor only question so the results are applicable only to those individuals that have reported supervisory responsibilities.

Table 10. Independent T test Mean Comparison of MWDS on Items 49-82

	Mean (SD)	Mean (SD)	df	t	p	Cohen's d
Competencies	(GS 0-9)	(GS 10-15)				
(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	-7.00 (10.82)	-5.45 (9.24)	767	-2.04	.041	-.15
(58)* Represent the interpretive division in broader park planning and management.	-11.12 (13.40)	-6.45 (9.95)	286	-3.13	.002	-.37
(65) Foster an environment conducive for routine, informal, peer-driven evaluation.	-6.54 (11.48)	-8.37 (10.64)	796	2.26	.024	.16
(66) Apply results of formal and informal evaluation to ensure programming meets desired outcomes.	-7.27 (11.24)	-9.48 (10.67)	788	2.73	.007	.19

*Supervisor only question

Do staff with different years of experience in current position have different training needs?

To investigate this question we asked respondents to report the number of years that they have held their current position. We then developed 3 groups of respondents based on their years in their current position. Group 1 represented individuals that held their position for 0-2 years (n=214; 25.5%). Group 2 was individuals that have been in their position for 3-5 years (n=256; 30.5%), and Group 3 represented individuals that have been in their position for 6 or more years (n=369; 44%). We then compared the mean weighted discrepancy scores (MWDS) of the 3 groups using an ANOVA with post hoc comparisons. The significant results are reported in Table 11. For the competency category *Audience Experience*, individuals that have held their position for 3-5 years consistently had greater MWDS than group 1 or group 3. For the competency category *Finding and Assessing Knowledge* the composite and 4 items reflected that group 2 again had greater MWDS than group 3. Finally, for the competency category *Partnering, Collaboration and Community Outreach*, Group 3 (6+ years in position) had

significantly lower MWDS on the composite and 3 items than groups 1 and 2. In other words less experienced individuals appeared to have greater training needs pertaining to *Partnering, Collaboration and Community Outreach*.

Table 11. ANOVA Comparison of Mean MWDS by Years in Current Position

	0-2 (1)	3-5 (2)	6+ (3)	ANOVA			Post Hoc (cohen's d)
Competencies	M (SD)	M (SD)	M (SD)	F	(df)	p	
<i>Audience Experience</i>	-6.34 (7.44)	-8.37 (6.61)	-6.73 (7.01)	5.83	(2, 821)	.003	1>2** (-.29) 2<3* (.24)
(2) Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.	-6.81 (9.93)	-9.92 (10.11)	-7.47 (10.36)	6.29	(2, 802)	.002	1>2** (-.31) 2<3* (.24)
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	-9.26 (10.67)	-12.71 (10.61)	-10.37 (11.28)	6.13	(2, 810)	.002	1>2** (-.32) 2<3* (.21)
(5) Plan interpretation based on knowledge of specific audiences.	-5.47 (9.83)	-8.65 (9.83)	-6.49 (10.73)	5.91	(2, 801)	.003	1>2** (-.32) 2<3* (.21)
(7) Adapt interpretation as needed to meet the physical, emotional, cultural and cognitive needs of audience members.	-7.20 (10.88)	-9.90 (9.72)	-7.46 (10.29)	5.18	(2, 800)	.006	1>2* (-.26) 2<3* (.24)
(9) Identify and engage non-visiting audiences through using existing and emerging media technologies.	-7.42 (11.89)	-10.92 (11.12)	-10.77 (11.29)	6.73	(2, 769)	.001	1>2** (-.30) 1>3** (-.29)
(11) Facilitate collaborative learning by encouraging audiences to participate and contribute to their interpretive experiences.	-5.31 (9.62)	-7.98 (9.23)	-4.93 (9.47)	8.08	(2, 796)	.000	1>2** (-.28) 2<3*** (.33)
(12) Encourage visitors to safely express personal viewpoints and hear the perspectives of others.	-4.61 (10.24)	-7.04 (9.28)	-4.42 (9.06)	6.10	(2, 793)	.002	1>2* (-.25) 2<3** (.29)

<i>Finding and Assessing Knowledge</i>	-6.31 (7.79)	-7.24 (7.12)	-5.65 (7.46)	3.33	(2, 819)	.036	2<3* (.22)
(19) Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research.	-8.07 (9.43)	-8.77 (11.08)	-6.21 (10.02)	5.04	(2, 801)	.007	2<3** (.24)
(27) Explore controversial issues with visitors to pursue an understanding of the diverse perspectives on a topic.	-7.28 (11.00)	-7.69 (9.73)	-5.56 (9.72)	3.74	(2, 795)	.024	2<3* (.22)
(28) Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource.	-7.28 (10.13)	-8.66 (9.23)	-5.68 (8.89)	7.34	(2, 782)	.001	2<3*** (.33)
(29) Facilitate experiences where visitors can investigate ways to create a healthier natural and cultural environment.	-7.21 (10.22)	-8.74 (9.60)	-6.21 (9.45)	4.74	(2, 772)	.009	2<3** (.27)
<i>Partnering, Collaboration and Community Outreach</i>	-6.53 (10.15)	-7.68 (8.59)	-4.57 (8.86)	8.66	(2, 792)	.000	1<3* (.21) 2<3*** (.36)
(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.	-5.98 (10.06)	-6.81 (9.70)	-3.69 (9.23)	8.14	(2, 767)	.000	1<3* (.24) 2<3*** (.33)
(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	-6.15 (11.85)	-7.56 (10.25)	-4.55 (9.98)	5.55	(2, 751)	.004	2<3** (.30)
(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	-6.94 (10.73)	-8.61 (10.11)	-4.56 (9.85)	11.06	(2, 747)	.000	1<3* (.23) 2<3*** (.41)

*p<.05 **p<.01 ***p<.001

Do staff with different levels of experience in I&E have different training needs?

To investigate this question we asked respondents to report the number of years that they have worked in the field of Interpretation and Education. We then developed 3 groups of respondents based on their years of experience in Interpretation and Education. Group 1 represented individuals that had 0-2 years of experience (n=65; 8%). Group 2 represented individuals that had 3-5 years of experience (n=111; 13%), and Group 3 represented individuals that had 6 or more years of experience (n=667; 79%). We then compared the mean weighted discrepancy scores (MWDS) of the 3 groups using an ANOVA with post hoc comparisons. The significant results are reported in Table 12. For the competency category *Audience Experience*, individuals that had 0-2 years of experience had consistently lower mean weighted discrepancy scores on the composite and 5 individual items than group 3. For the competency category *Professional Development of Self and Others*, individuals with 0-2 years of experience in I&E had consistently lower MWDS on the composite and 5 items than group 2 and 3. These findings are

largely attributed to the lower level of importance the individuals with 0-2 years of experience in I&E reported for these competencies and their levels of preparedness (importance and preparedness were closely aligned).

Table 12. ANOVA Comparison of Mean MWDS by Years in Interpretation and Education

	0-2 (1)	3-5 (2)	6+ (3)	ANOVA			Post Hoc (cohen's d)
Competencies	<u>M</u> (SD)	<u>M</u> (SD)	<u>M</u> (SD)	F	(df)	p	
<i>Audience Experience Composite</i>	-4.63 (8.34)	-6.85 (7.21)	-7.35 (6.67)	4.55	(2, 824)	.011	1>3** (-.36)
(2) Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.	-3.05 (10.58)	-7.60 (9.74)	-8.52 (10.00)	8.18	(2, 807)	.000	1>2* (-.48) 1>3*** (-.45)
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	-7.00 (10.39)	-9.55 (10.24)	-11.26 (10.95)	4.85	(2, 813)	.008	1>3* (-.40)
(9) Identify and engage non-visiting audiences through using existing and emerging media technologies.	-4.60 (11.39)	-8.46 (11.93)	-10.76 (11.02)	8.72	(2, 772)	.000	1>3*** (-.55)
(14) Resolve conflicts through empathy and diplomacy.	-2.14 (9.32)	-5.27 (8.84)	-6.19 (9.90)	4.94	(2, 803)	.007	1>3** (-.42)
(15) Update interpretive programming based on changing societal trends.	-5.78 (11.41)	-8.60 (9.96)	-10.63 (11.44)	5.54	(2, 784)	.004	1>3** (-.42)
<i>Professional Development of Self and Others Composite</i>	-4.76 (8.58)	-7.82 (8.77)	-7.18 (8.00)	3.14	(2, 831)	.044	1>2* (-.35)
(68) Plan for self-development and continuously pursue professional growth opportunities.	-4.52 (10.08)	-9.20 (13.04)	-10.20 (11.64)	6.83	(2, 815)	.001	1>2* (-.40) 1>3*** (-.52)
(79) Use feedback to improve personal performance.	-2.79 (8.12)	-6.98 (9.73)	-6.49 (9.34)	4.91	(2, 817)	.008	1>2* (-.47) 1>3** (-.42)
(80) Identify and articulate elements of success when critiquing the work of peers.	-4.35 (9.49)	-8.44 (10.96)	-5.68 (9.72)	4.37	(2, 796)	.013	1>2* (-.40) 2<3* (-.27)
(81) Practice effective listening and communication skills to provide constructive feedback.	-3.15 (9.24)	-7.64 (10.79)	-6.43 (9.72)	4.24	(2, 816)	.015	1>2* (-.45) 1>3* (-.35)
(82) Communicate positive, provisional and specific verbal and written feedback in peer mentoring and coaching relationships.	-3.17 (10.26)	-7.42 (11.36)	-5.50 (10.69)	3.03	(2, 779)	.049	1>2* (-.39)

*p<.05 **p<.01 ***p<.001

Is there a relationship between the number of years worked in current position and mean weighted discrepancy score composites?

No, there were no significant correlations between years worked in current position and the mean weighted discrepancy score composites.

Is there a relationship between the number of years worked in Interpretation and Education and mean weighted discrepancy score composites?

Although there were a few significant correlations between some of the MWDS composites and years worked in Interpretation and Education, these relationships were extremely weak and inconsequential in a practical sense.

Does the amount of time spent on responsibilities related to I&E influence training needs?

There were no significant differences in mean weighted discrepancy score composites between the group that spent more than 20% of their time on I&E and the group that spent less than 20% of their time on I&E.

Is there a relationship between items pertaining to how often tasks are undertaken (items 83-100 on survey) and importance composites?

No. There were significant but very weak correlations between some items (83-100) and importance composites.

Are there different training needs depending upon the age of individuals?

We assigned respondents into 3 generational groups of respondents based on their reported age. Group 1 represented the “millennial” generation with an age range of 18-34 (n=162; 20%). Group 2 represented “generation X” (n=276; 34%), and Group 3 represented the “baby boomer” generation (n=381; 46%). We then compared the mean weighted discrepancy scores (MWDS) of the 3 groups using an ANOVA with post hoc comparisons. The significant results are reported in Table 13. For the competency category *Partnering, Collaboration and Community Outreach*, the “millennial” generation and “Gen X” had significantly higher MWDS on the composite than “boomers” and significantly higher MWDS on 2 items pertaining to local involvement and partnering than Generation X and the Baby Boomers.

Table 13. ANOVA Comparison of Mean MWDS by Generations

	18-34 (1)	35-49 (2)	50+ (3)	ANOVA			Post Hoc (cohen's d)
Competencies	<u>M</u> (SD)	<u>M</u> (SD)	<u>M</u> (SD)	F	(df)	p	
<i>Partnering, Collaboration and Community Outreach MWDS Composite</i>	-7.69 (9.50)	-6.73 (9.46)	-4.76 (8.36)	7.04	(2, 771)	.001	1<3** (.33) 2<3* (.22)
(52) Build a trusting relationship with partners by facilitating open dialogue.	-7.86 (11.46)	-7.62 (10.77)	-5.06 (10.06)	5.90	(2, 752)	.003	1<3* (.26) 2<3** (.25)
(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	-8.66 (11.72)	-5.94 (10.47)	-4.78 (9.93)	7.07	(2, 732)	.001	1<2* (.24) 1<3*** (.36)
(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	-9.37 (10.93)	-6.66 (10.64)	-4.88 (8.91)	10.59	(2, 729)	.000	1<2* (.25) 1<3*** (.45)

*p<.05 **p<.01 ***p<.001

Conclusions

In an effort to identify critical training needs in Interpretation and Education (I&E), a team of subject matter experts from across the profession – including six academic institutions, the National Association for Interpretation, and National Park Service -- joined professionals from Stephen T. Mather Training Center and Clemson University to develop and then implement a study that investigated how important and how well prepared I&E employees are in fulfilling specific competencies that are relevant and applicable in the 21st century and necessary to perform at the highest levels. An online survey instrument was developed and then sent to ALL 3,469 NPS employees identified as having Interpretation and Education duties during March and April, 2014. The survey included a list of 80 specific competency questions that corresponded to 6 overarching categories. These categories were: *Audience Experience; Finding and Assessing Knowledge; Appropriate Techniques; Partnering, Collaboration and Community Outreach; Planning and Evaluation; and Professional Development of Self and Others*. At the conclusion of data collection in April, 1,032 respondents returned surveys, resulting in a response rate of 29.7%. Put simply, approximately one-third of all interpretation and education personnel in the NPS responded.

What are the biggest training needs for NPS I&E staff?

We calculated a mean weighted discrepancy score (MWDS) for each competency and category of competencies (composite mean score of all items in category). The largest MWDS pertained to the category *Audience Experience* and were related to assessing the needs of diverse audiences, engaging the non-visiting audience, and updating interpretive programming based on changing societal trends. The results also identified other individual competencies that could be considered as training priorities, such as the development of skills related to social media and websites (*Appropriate Techniques*), keeping current on interpretive best practices, theories, and changes in the field (*Professional Development of Self and Others*), and planning for and pursuing professional development opportunities (*Professional Development of Self and Others*). Table 14 lists the 7 competencies with the largest mean weighted discrepancy scores.

Table 14. Top 7 Training Needs based on Mean Weighted Discrepancy Scores

Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.
Identify and engage non-visiting audiences through using existing and emerging media technologies.
Update interpretive programming based on changing societal trends.
Plan for self-development and continuously pursue professional growth opportunities.
Apply best practices and protocols in developing informational and interpretive content for park websites.
Evaluate effectiveness of interpretive products or services at all stages of development.
Keep current on interpretive best practices, theories and changes in the field of interpretation.

What are the biggest training needs for NPS I&E supervisors?

For individuals that identified themselves as having a supervisory position, the results also identified several critical training needs. These competencies pertained to finding and using alternative funding to offset costs; developing, implementing and evaluating the effectiveness of marketing strategies for interpretation; and providing training based on employee needs and park goals (Table 5).

Do supervisors have different training needs than non-supervisors?

In the *Audience Experience* category, supervisors reported significantly greater degrees of importance and less preparedness on 9 competencies as evidenced by the significant differences in mean weighted discrepancy scores (Table 6). In the *Finding and Assessing Knowledge* category, supervisors had significantly greater MWDS on 5 competencies. In the *Appropriate Techniques* category, supervisors reported significantly greater MWDS on 7 competencies. Note: These results should be interpreted cautiously; based on diagnostic statistics the differences could be interpreted as minor or small.

Do staff with different employment levels (GS) have different training needs (indicated by mean MWDS)?

To answer this question we developed 3 groups based on GS level: GS 0-6 (frontline employees), GS 7-9 (experienced front line and mid level management), and GS 10-15 (supervisors). We then compared the three groups' MWDS pertaining to each competency and composite category using one-way analysis of variance (ANOVA) with a post hoc comparison (Table 9). The results suggest that the GS 10-15 group had significantly larger MWDS in 7 competencies pertaining to *Audience Experience* than lower GS level groups. In particular, the competency: "Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures," had the highest MWDS and the largest Cohen's d effect size (medium).

Do staff with different years of experience in current position have different training needs?

We developed 3 groups of respondents based on their years in their current position. Group 1 represented individuals that held their position for 0-2 years (n=214; 25.5%). Group 2 was individuals that have been in their position for 3-5 years (n=256; 30.5%), and Group 3 represented individuals that have been in their position for 6 or more years (n=369; 44%). We then compared the mean weighted discrepancy scores (MWDS) of the 3 groups using an ANOVA with post hoc comparisons (Table 11). Results suggest that mid level staff (group 2) had greater MWDS for the competency category *Audience Experience* than group 1 or group 3. For the competency category *Finding and Assessing Knowledge*, the results pertaining to the composite and 4 items suggested that group 2 again had greater training needs than group 3. Finally, for the competency category *Partnering, Collaboration and Community Outreach*, Group 3 (6+ years in position) had significantly lower MWDS on the composite and 3 items than groups 1 and 2. In other words less experienced individuals appeared to have greater training needs pertaining to *Partnering, Collaboration and Community Outreach*.

Do staff with different levels of experience in I&E have different training needs?

We developed 3 groups of respondents based on their years of experience in Interpretation and Education. Group 1 represented individuals that had 0-2 years of experience (n=65; 8%). Group 2 represented individuals that had 3-5 years of experience (n=111; 13%), and Group 3 represented individuals that had 6 or more years of experience (n=667; 79%). We then compared the mean weighted discrepancy score (MWDS) of the 3 groups using an ANOVA with post hoc comparisons (Table 12). For the competency category *Audience Experience*, "entry level" individuals that had 0-2 years of experience had consistently lower MWDS on the composite and 5 individual items than group 3. For the competency category *Professional Development of Self and Others*, individuals with 0-2 years of experience in I&E had consistently lower meanweighted discrepancy scores on the composite and 5 items than group 2 and 3.

These findings are largely attributed to the lower level of importance the inexperienced individuals reported for these competencies and their levels of preparedness (importance and preparedness were closely aligned).

Are there different training needs depending upon the age of individuals?

We assigned respondents into 3 generational groups of respondents based on their reported age. Group 1 represented the “millennial” generation with an age range of 18-34 (n=162; 20%). Group 2 represented “generation X” (n=276; 34%), and Group 3 represented the “baby boomer” generation (n=381; 46%). We then compared the mean weighted discrepancy scores (MWDS) of the 3 groups using an ANOVA with post hoc comparisons (Table 13). For the competency category *Partnering, Collaboration and Community Outreach*, the “millennial” generation and the “generation X” had greater training needs than the Baby Boomers.

Summary

This study identified a number of strategic training needs that appear vital for the National Park Service to address. These include providing advanced training in skills necessary for leadership and management such as partnering, collaboration, and community outreach; identifying and securing alternative funding through grants, partnerships, and other “non-traditional” revenue sources; as well as evaluating not only educational and interpretive products and programs but also evaluating the marketing of these services. Broader skills pertaining to the provision of interpretive and educational services for new, diverse, and non-traditional audiences as well as skills pertaining to reaching the “non-visiting” audience also appear particularly relevant and important areas for future training programs. Lastly the process of reviewing and updating the competencies associated with Interpretation and Education reiterated the need for the National Park Service to continually identify and test the ‘best practices’ in interpretation and education that are assumed to facilitate the co-creation of meaningful experiences and thereby meet the needs of the 21st Century public. Through experimentation, refinement, and periodic evaluation/validation of these best practices, the National Park Service’s Interpretation and Education Program will continue to ensure that techniques and approaches promoted in training and certification efforts are supported by the “best available science” (validating techniques to ensure that they consistently deliver desired outcomes in particular contexts) and will enhance visitor outcomes.

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APPENDICES

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Appendix A

Cover Letter

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IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

Dear Interpretation and Education Colleague,

The National Park Service is conducting a needs assessment survey to improve professional development opportunities for employees with interpretation and education (I&E) responsibilities across the service. To support this effort, Clemson University is surveying employees to validate and compile responses to these responsibilities, duties, and tasks.

Why take this survey?

Our society is rapidly shifting to be more globalized, digitized, and learner-centered. Since the people we are trying to reach and serve are changing, the National Park Service Office of Learning and Development wants to ensure the workforce is prepared to meet these changing needs. Survey results will show ways to interconnect and support initiatives from the Call to Action to prepare and propel interpretation and education in the national parks into its 2nd century and beyond.

This survey will help Learning and Development:

- Identify and improve the professional development opportunities that are the highest priority for you.
- Prioritize existing funding and resources for training in interpretation and education.
- Advocate for new funding and resources for training in interpretation and education.

How long will the survey take?

The survey should take you *less than 30 minutes* to complete. You can close and return to the survey and your responses will be saved. Hit submit when you have completed the survey.

Follow this link to the Survey:

[Take the Survey](#)

Or copy and paste the URL below into your internet browser:

https://clemsonhealth.qualtrics.com/WRQualtricsSurveyEngine/?Q_SS=bJzgJX4ot5wYyZD_5bdTX7TKabFI5s9&_=1

Responses are due by April 22, 2014

Who created the survey?

This survey was created through a partnership agreement between the National Park Service and Clemson University. The tasks listed in the survey were identified through extensive research into past, current, and emerging best practices for interpretation and education. The items were then edited and refined by over 100 subject matter experts including National Park Service interpretation and education practitioners, managers, and superintendents, as well as representatives from seven academic institutions, the National Association for Interpretation, and the National Park System Advisory Board Education Subcommittee.

When will results be available?

Preliminary results will be available as early as this summer, with a final report delivered late fall. The NPS Office of Learning and Development along with Clemson will analyze the results to identify gaps where training and professional development opportunities lie. Final results will be available to all NPS employees in anonymous summary form.

This is an official survey, which is appropriate to complete during your workday. Your answers are completely anonymous, and the data gathered will be released only as summaries. The best browsers to use are Google Chrome, Mozilla Firefox or version 8 or higher of Internet Explorer.

** Please note that the survey link is individualized and cannot be forwarded.*

There is a possibility that we will use this data as part of a research paper to be published in a scientific journal. Any use of this data will be in aggregate form, without any attribution to any individual respondent. If you object to the use of your data, or if you have questions regarding its potential use, please contact Dr. Brett Wright at (864) 656-3036 or wright@clemson.edu. The option to share data for research purposes is voluntary and you can choose to withdraw from the study at any time without penalty.

If you have questions or comments about the survey itself:

Contact Katie Bliss at Katie_Bliss@nps.gov or Dr. Brett Wright at wright@clemson.edu.

If someone you know needs a link to the survey:

Contact Gina Depper at gdepper@g.clemson.edu

For additional information about the purpose and development of the survey:

Visit the Interpretive Development Program website at: <http://idp.eppley.org/IENA>

Thank you for helping to improve NPS Interpretation and Education!

Sincerely,

Julia Washburn

Associate Director, Interpretation, Education and Volunteers

Follow this link to the Survey:

[Take the Survey](https://clemsonhealth.qualtrics.com/WRQualtricsSurveyEngine/?Q_SS=bJzgJX4ot5wYyZD_5bdTX7TKabFI5s9&_ =1)

Or copy and paste the URL below into your internet browser:

https://clemsonhealth.qualtrics.com/WRQualtricsSurveyEngine/?Q_SS=bJzgJX4ot5wYyZD_5bdTX7TKabFI5s9&_ =1

*Responses to this email go directly to Gina Depper (gdepper@g.clemson.edu)

Appendix B

Survey Instrument

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Interpretation and Education Training Needs Assessment

Introduction & Instructions

Why take this survey?

Our society is rapidly shifting to be more globalized, digitized, and learner-centered. Since the people we are trying to reach and serve are changing, the National Park Service Office of Learning and Development wants to ensure the workforce is prepared to meet these changing needs. Survey results will show ways to interconnect and support initiatives from the Call to Action to prepare and propel interpretation and education in the national parks into its 2nd century and beyond.

This survey will help Learning and Development:

- Identify and improve the professional development opportunities that are the highest priority for you.
- Prioritize existing funding and resources for training in interpretation and education.
- Advocate for new funding and resources for training in interpretation and education.

Participation is voluntary and you can choose to withdraw from the study at any time without penalty.

How long will the survey take?

The survey should take you *less than 30 minutes* to complete. You can close and return to the survey and your responses will be saved. Hit submit when you have completed the survey.

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This survey was created through a partnership agreement between the National Park Service and Clemson University. The tasks listed in the survey were identified through extensive research into past, current, and emerging best practices for interpretation and education. The items were then edited and refined by over 100 subject matter experts including National Park Service interpretation and education practitioners, managers, and superintendents, as well as representatives from seven academic institutions and the National Association for Interpretation.

When will results be available?

Preliminary results will be available as early as this summer, with a final report delivered late fall. The NPS Office of Learning and Development along with Clemson will analyze the results to identify gaps where training and professional development opportunities lie. Final results will be available to all NPS employees in anonymous summary form.

You will be asked to rate how important each task is for your current position as well as how prepared you are to carry out the listed task. Please respond to the questions for all six (6) essential categories that apply to all employees with any responsibilities related to Interpretation and Education. They are listed below:

Audience Experience
Finding and Assessing Knowledge
Appropriate Techniques
Partnering, Collaboration and Community Outreach
Planning and Evaluation
Professional Development of Self and Others

Q1 Which best describes the level of your current position:

- ☐ Supervisory (1)
- ☐ Non-supervisory (2)

Audience Experience

The elements in this section refer to knowing and understanding audiences and reaching out to both visiting and non-visiting publics to create a welcoming, relevant, collaborative experience for all.

In the first column please rate how important the following professional competency element is in the performance of your current position on a 1-7 scale with 1 being Unimportant and 7 being Extremely Important.

In the second column please rate how well prepared you are to perform that same professional competency element in the performance of your current position on a 1-7 scale with 1 being Unprepared and 7 being Extremely Well Prepared. If the competency element is not applicable to your current position, please mark 0-N/A.

	Importance Unimportant -->Extremely Important							Preparedness Unprepared --> Extremely Well Prepared							
	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	0- N/A (1)	1 (2)	2 (3)	3 (4)	4 (5)	5 (6)	6 (7)	7 (8)
Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation. (2a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures. (3a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Explore the relevance that park resources have for different audiences. (4a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan interpretation based on knowledge of specific audiences. (5a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apply principles of current learning theory to engage audience members of different developmental stages. (6a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adapt interpretation as needed to meet the physical, emotional, cultural and cognitive needs of audience members. (7a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify and engage non-visiting audiences through community outreach efforts. (8a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify and engage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

non-visiting audiences through using existing and emerging media technologies. (9a/b)															
Display professional, open and patient demeanor in all audience interactions in order to provide excellent customer service. (10a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Facilitate collaborative learning by encouraging audiences to participate and contribute to their interpretive experiences. (11a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Encourage visitors to safely express personal viewpoints and hear the perspectives of others. (12a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Display a genuine interest in and respect for the diversity of audience experiences and input. (13a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Resolve conflicts through empathy and diplomacy. (14a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Update interpretive programming based on changing societal trends. (15a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Identify and integrate the educational objectives and/or curriculum standards of groups. (16a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Connect visitors with related resources and experiences outside of the park. (17a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Finding and Assessing Knowledge

The elements in this section refer to gathering, synthesizing and assessing resource and subject matter knowledge in order to develop accurate, relevant interpretive content.

In the first column please rate how important the following professional competency element is in the performance of your current position on a 1-7 scale with 1 being Unimportant and 7 being Extremely Important.

In the second column please rate how well prepared you are to perform that same professional competency element in the performance of your current position on a 1-7 scale with 1 being Unprepared and 7 being Extremely Well Prepared. If the competency element is not applicable to your current position, please mark 0-N/A.

	Importance Unimportant -->Extremely Important							Preparedness Unprepared --> Extremely Well Prepared							
	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	0- N/A (1)	1 (2)	2 (3)	3 (4)	4 (5)	5 (6)	6 (7)	7 (8)
Seek out and incorporate diverse and newly discovered primary and secondary source materials. (18a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research. (19a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify and illuminate embedded biases in historical and scientific data and documents. (20a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acknowledge history and science as processes of continual revision by updating a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

site's stories and relevance through research. (21a/b)															
Investigate and incorporate contemporary cultural and natural resource issues into discussions with visitors to help them find personal relevance. (22a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Connect historical events with broader cultural and historical trends. (23a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Articulate how humans impact natural systems and how natural systems impact humans. (24a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Connect historical and natural resources to one another. (25a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Articulate complex concepts in layman's terms without using jargon or losing accuracy. (26a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Explore controversial issues with visitors to pursue an understanding of the diverse perspectives on a topic. (27a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource. (28a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Facilitate experiences where visitors can investigate ways to create a healthier	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

natural and cultural environment. (29a/b)															
---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appropriate Techniques

The elements in this section refer to the use of appropriate interpretive strategies and techniques to explore the significance and relevance of park resources with diverse audiences.

In the first column please rate how important the following professional competency element is in the performance of your current position on a 1-7 scale with 1 being Unimportant and 7 being Extremely Important.

In the second column please rate how well prepared you are to perform that same professional competency element in the performance of your current position on a 1-7 scale with 1 being Unprepared and 7 being Extremely Well Prepared. If the competency element is not applicable to your current position, please mark 0-N/A.

	Importance Unimportant -->Extremely Important							Preparedness Unprepared --> Extremely Well Prepared							
	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	0- N/A (1)	1 (2)	2 (3)	3 (4)	4 (5)	5 (6)	6 (7)	7 (8)
Select interpretive techniques and content to meet the goals and desired outcomes of the park/site. (30a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Select interpretive techniques and content to address diverse audience needs and interests. (31a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use interpretive techniques to intentionally craft opportunities for both intellectual and emotional connections to resource meanings. (32a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Develop and present all interpretive products using a cohesive organizational strategy, audience-relevant theme and well-crafted introduction, conclusion and transitions. (33a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan for logistical issues and skillfully manage groups to enhance audience experience and protect resources and visitors. (34a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adjust programs to meet audience needs based on audience questions and cues. (35a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Select and integrate props, demonstrations and illustrative media into programs to reveal meanings and relevance. (36a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrate experiential techniques that focus audience attention on the tangible park resources rather than on the interpreter. (37a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide appropriate types of orientation, information and audience-centered interpretation in informal visitor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

contacts. (38a/b)																
Write and integrate interpretive text for traditional and digital media. (39a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Design traditional and digital media to use interpretive principles. (40a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium. (41a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apply best practices and protocols in developing informational and interpretive content for park websites. (42a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop place-based experiential education programs that incorporate state and national curriculum standards. (43a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emphasize discovery techniques and the Socratic method in education and interpretive programs. (44a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Address different learning styles and apply multiple intelligence theory in curriculum-based education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

programs. (45a/b)															
Use facilitation and dialogue skills to foster a respectful and proactive exchange of thoughts and ideas. (46a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use techniques that foster citizenship skills (such as critical thinking, problem-solving, informed decision making, collaboration and respectful dialogue). (47a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comply with technical and legal standards in developing programs and media (NPS editorial guidelines, accessibility mandates, copyright, intellectual property, etc.). (48a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Partnering, Collaboration and Community Outreach

The elements in this section refer to the ability to partner and collaborate on a daily basis working cooperatively, developing networks and building alliances.

In the first column please rate how important the following professional competency element is in the performance of your current position on a 1-7 scale with 1 being Unimportant and 7 being Extremely Important.

In the second column please rate how well prepared you are to perform that same professional competency element in the performance of your current position on a 1-7 scale with 1 being Unprepared and 7 being Extremely Well Prepared. If the competency element is not applicable to your current position, please mark 0-N/A.

	Importance Unimportant -->Extremely Important	Preparedness Unprepared --> Extremely Well Prepared
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	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	0- N/A (1)	1 (2)	2 (3)	3 (4)	4 (5)	5 (6)	6 (7)	7 (8)
Foster and maintain quality partnerships that share a vision for interpretation and education. (49a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan. (50a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaborate with a wide variety of stakeholders to craft interpretive goals that mutually benefit the park, agency, audience and broader community. (51a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Build a trusting relationship with partners by facilitating open dialogue. (52a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations. (53a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaborate with local formal and informal education institutions to share resources and expand learning opportunities. (54a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Find and use alternative funding to offset costs. (55a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regularly assess partnerships to ensure mutual effectiveness. (56a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Planning and Evaluation

The elements in this section refer to the ability to plan and evaluate products and services for multiple outcomes to maximize the desired outcomes for park programming, to meet park and agency missions to identify professional development needs, to achieve visitor satisfaction and to address societal interests.

In the first column please rate how important the following professional competency element is in the performance of your current position on a 1-7 scale with 1 being Unimportant and 7 being Extremely Important.

In the second column please rate how well prepared you are to perform that same professional competency element in the performance of your current position on a 1-7 scale with 1 being Unprepared and 7 being Extremely Well Prepared. If the competency element is not applicable to your current position, please mark 0-N/A.

	Importance Unimportant -->Extremely Important							Preparedness Unprepared --> Extremely Well Prepared							
	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	0- N/A (1)	1 (2)	2 (3)	3 (4)	4 (5)	5 (6)	6 (7)	7 (8)
Prioritize and align interpretative and education products and services with division, park and agency goals and objectives. (57a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Represent the interpretive division in broader park planning and management. (58a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaborate with colleagues, subject matter experts, partners, potential audience members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

and other stakeholders during planning and development of all interpretive and educational products and services. (59a/b)															
Strategically plan and develop an array of program and media services to allow audience experiences to complement or build upon one another. (60a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Develop, implement and evaluate effectiveness of marketing strategies for interpretation. (61a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Analyze costs and benefits as part of prioritizing programming and allocating resources. (62a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Evaluate effectiveness of interpretive products or services at all stages of development. (63a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Partner with qualified specialists to evaluate interpretation. (64a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Foster an environment conducive for routine, informal, peer-driven evaluation. (65a/b)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Apply results of formal and informal evaluation to ensure programming meets	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

desired outcomes. (66a/b)															
Identify training needs of staff, volunteers and partners based on results of evaluation. (67a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Professional Development of Self and Others

The elements in this section refer to initiating and facilitating professional development to constantly build new skills and hone interpretive effectiveness for self and others.

In the first column please rate how important the following professional competency element is in the performance of your current position on a 1-7 scale with 1 being Unimportant and 7 being Extremely Important.

In the second column please rate how well prepared you are to perform that same professional competency element in the performance of your current position on a 1-7 scale with 1 being Unprepared and 7 being Extremely Well Prepared. If the competency element is not applicable to your current position, please mark 0-N/A.

	Importance Unimportant -->Extremely Important							Preparedness Unprepared --> Extremely Well Prepared							
	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	0- N/A (1)	1 (2)	2 (3)	3 (4)	4 (5)	5 (6)	6 (7)	7 (8)
Plan for self-development and continuously pursue professional growth opportunities. (68a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keep current on interpretive best practices, theories and changes in the field of interpretation. (69a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop and experiment with new interpretive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

techniques. (70a/b)															
Share interpretive success with peers within workgroup and broader communities of practice. (71a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify and minimize the impact of own personal biases. (72a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaborate with local and national trainers to identify employee training needs. (73a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide training based on employee needs and park goals. (74a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide effective interpretive training by applying knowledge of both training methods and interpretive theory. (75a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foster an environment of interpersonal trust, and open conversations where peers share insights and feedback. (76a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seek out and participate in peer collaboration and mentoring relationships. (77a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use self-assessment and evaluative feedback from others to gauge effectiveness of	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

communication methods. (78a/b)															
Use feedback to improve personal performance. (79a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify and articulate elements of success when critiquing the work of peers. (80a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Practice effective listening and communication skills to provide constructive feedback. (81a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicate positive, provisional and specific verbal and written feedback in peer mentoring and coaching relationships. (82a/b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In this final section, please provide information about you and your current position.

How often do you participate in the following tasks:

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Very Often (5)
Plan/conduct demonstrations (83)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan/conduct living history (84)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan/conduct education programs (85)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan/conduct front-line programs (any type) (86)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engage in informal interpretive contacts (87)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

information/orientation services (88)					
Plan/conduct outreach programs (89)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan/conduct facilitated dialogues (90)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lead collaborative teams (91)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage volunteers (92)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coach others (93)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Train others (94)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervise others (95)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop media products (96)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage websites (97)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage social media (98)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participate in interpretive planning (99)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assist in interpretive research (100)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How prepared are you in the following engagement/co-creation techniques?

	0-N/A	1- Unprepared	2	3	4	5	6	7- Extremely Well Prepared
Facilitated dialogue (101)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multi-sensory engagement (102)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guided imagery (103)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resource immersion techniques	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(directed experiences) (104)								
Strategic questioning (arc of questions or essential questions) (105)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Co-developed themes (106)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Citizen science/service learning (107)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guided discovery (108)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audience-generated art, photos, music, drama, stories (109)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audience-curated exhibits (110)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Role playing (111)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Demographics

Q112 Grade Level: (Current GS Level, Example: GS-7)

Q113 Position Series: (Example: 0025)

Q114 Position Description Title: (Example: Supervisory Interpretive Park Ranger)

Q115 Number of years served in your current position:

Q116 Number of years served in the Interpretation and Education (I&E) profession:

Q117 Number of years served in the National Park Service:

Q118 Check the statement that best applies to your current position:

- ☐ I spend more than 20% of my time on interpretation and education responsibilities. (1)
- ☐ I spend less than 20% of my time on interpretation and education responsibilities. (2)

Q119 Age (Years):

Q120 What is the highest level of education that you have obtained:

- ☐ Less than 12 years (1)
- ☐ High school diploma (2)
- ☐ Associates degree (3)
- ☐ Bachelor's degree (4)
- ☐ Master's degree (5)
- ☐ Doctorate degree (6)

Q121 Please name your major field of study for any degree(s) obtained:

- Associates degree (3)
- Bachelor's degree (4)
- Master's degree (5)
- Doctorate degree (6)

Q122 What is your highest priority training need for professional development in interpretation and education? Please be specific and succinct.

Thank you for taking time to complete this voluntary survey. Your efforts will assist the NPS Learning and Development community in developing more meaningful training and professional education for NPS employees.

The survey responses collected will be anonymous and data collection and analysis handled by a third party entity, Clemson University. The results and report given to the National Park Service by Clemson will not contain identifiable information. While we do everything possible to minimize any potential or perceived risk to participants, we are required to inform you that the potential risk may be that information voluntarily given in the survey could make an individual identifiable. We will do everything we can to avoid this. The benefit of completing the survey is to identify the important aspects of National Park Service employees' positions and where they feel they are inadequately prepared for these important job aspects. It will allow for National Park Service administration to develop targeted training in the areas where it is most needed.

There is a possibility that we will use this data as part of a research paper to be published in a scientific journal. Any use of this data will be in aggregate form, without any attribution to any individual respondent. If you object to the use of your data, or if you have questions regarding its potential use, please contact Dr. Brett Wright at (864) 656-3036 or wright@clemson.edu. The option to share data for research purposes is voluntary and you can choose to withdraw from the study at any time without penalty or loss of benefits. If you have questions about your

rights in the research you may contact Clemson's Institutional Review Board at irb@clemson.edu or (866) 297-3071.

Appendix C

Demographic Charts

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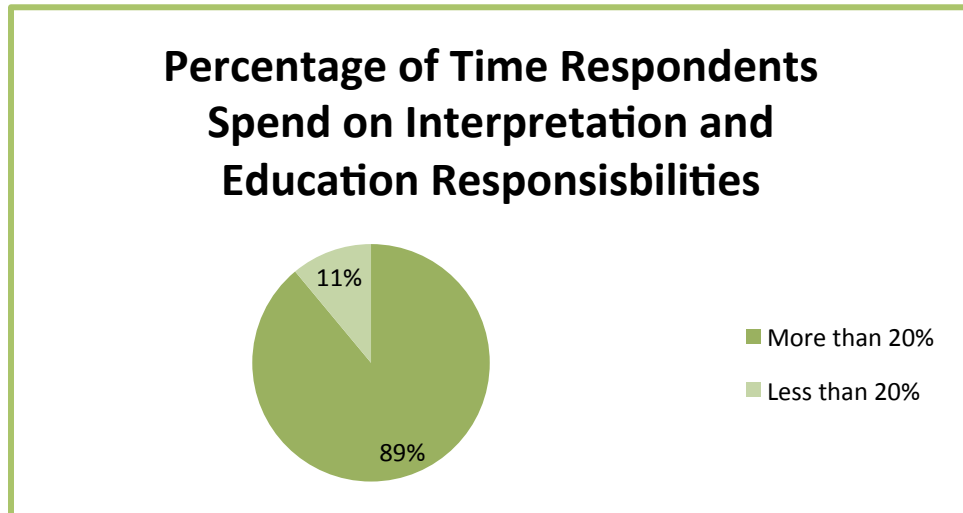


Figure C-1. The percentage of time spent by respondents on interpretation and education job duties.

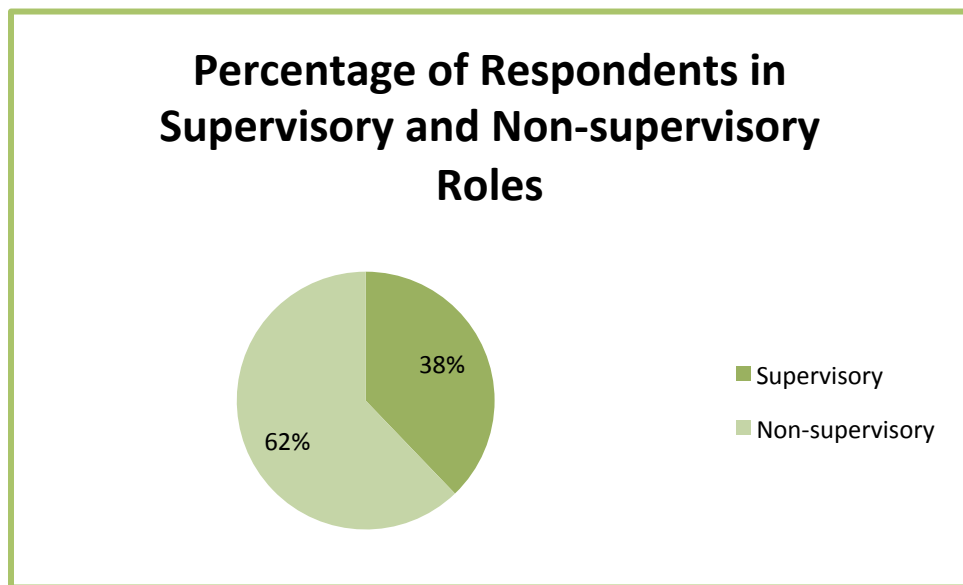


Figure C-2. The percentage of respondents in supervisory and non-supervisory roles.

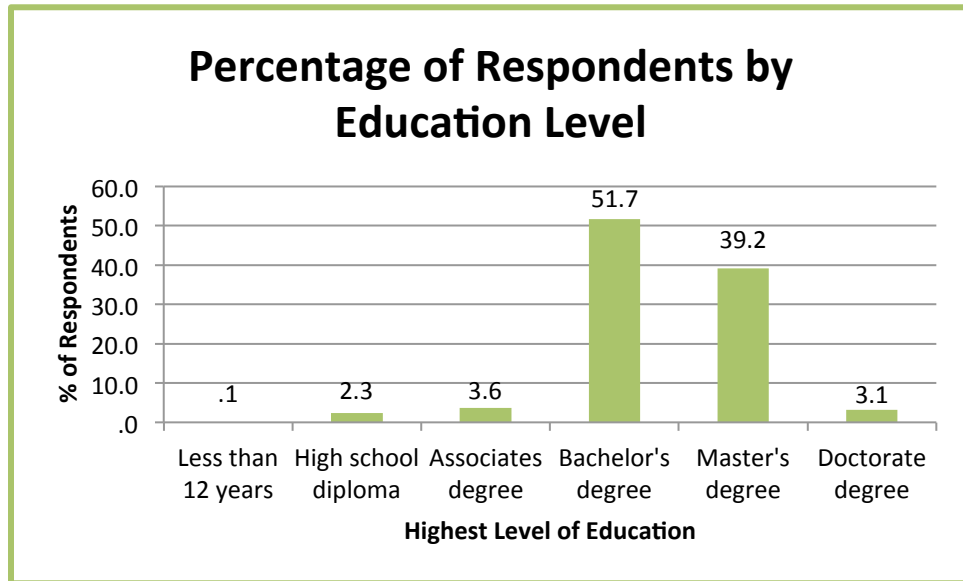


Figure C-3. The percentage of respondents by highest level of education.

Table C-1. Employment History of Study Respondents

	N	Minimum	Maximum	Mean	Std. Deviation
Age (years)	819	22	78	46.58	11.85
Number of years served in your current position	856	0	52	7.53	7.31
Number of years served in the Interpretation and Education (I&E) profession	848	0	55	15.56	10.34
Number of years served in the National Park Service	854	0	52	15.03	10.21

Appendix D

Importance Tables and Charts

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Perceptions of Importance - Audience Experience**Table D-1. Perceptions of Importance - Audience Experience**

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
Audience Experience								5.92	1.31
(10) Display professional, open and patient demeanor in all audience interactions in order to provide excellent customer service.	0.8	0.7	0.9	1.3	2.3	18.0	75.9	6.61	0.93
(13) Display a genuine interest in and respect for the diversity of audience experiences and input.	0.8	0.9	1.2	2.5	7.3	26.6	60.6	6.37	1.06
(4) Explore the relevance that park resources have for different audiences.	1.1	1.1	1.9	5.1	11.7	29.6	49.4	6.12	1.20
(14) Resolve conflicts through empathy and diplomacy.	1.5	1.5	2.0	5.5	10.5	28.4	50.7	6.10	1.26
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	1.3	1.0	1.5	6.2	12.4	31.6	45.9	6.06	1.21
(7) Adapt interpretation as needed to meet the physical, emotional, cultural and cognitive needs of audience members.	1.4	1.8	1.3	4.6	12.8	33.2	44.9	6.05	1.23
(5) Plan interpretation based on knowledge of specific audiences.	1.0	1.8	1.6	5.9	15.2	32.0	42.4	5.98	1.22
(11) Facilitate collaborative learning by encouraging audiences to participate and contribute to their interpretive experiences.	1.9	1.7	1.1	5.3	15.7	31.4	42.9	5.97	1.28
(15) Update interpretive programming based on changing societal trends.	1.9	1.9	2.5	7.4	14.6	28.2	43.4	5.89	1.37
(12) Encourage visitors to safely express personal viewpoints and hear the perspectives of others.	1.6	1.8	3.1	7.1	16.8	28.6	41.1	5.86	1.34
(16) Identify and integrate the educational objectives and/or curriculum standards of groups.	3.1	3.4	5.2	7.0	15.6	25.0	40.6	5.66	1.59
(6) Apply principles of current learning theory to engage audience members of different developmental stages.	2.5	2.9	3.3	9.7	18.0	27.6	36.0	5.65	1.48

(9)	Identify and engage non-visiting audiences through using existing and emerging media technologies.	3.1	2.5	4.5	9.2	16.3	27.3	37.2	5.64	1.53
(2)	Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.	1.9	2.6	3.7	10.5	19	27.8	34.5	5.63	1.43
(8)	Identify and engage non-visiting audiences through community outreach efforts.	3.4	2.2	5.1	8.4	18.2	26.9	35.7	5.59	1.54
(17)	Connect visitors with related resources and experiences outside of the park.	1.0	2.1	4.3	11.7	23.1	26.8	30.9	5.58	1.35

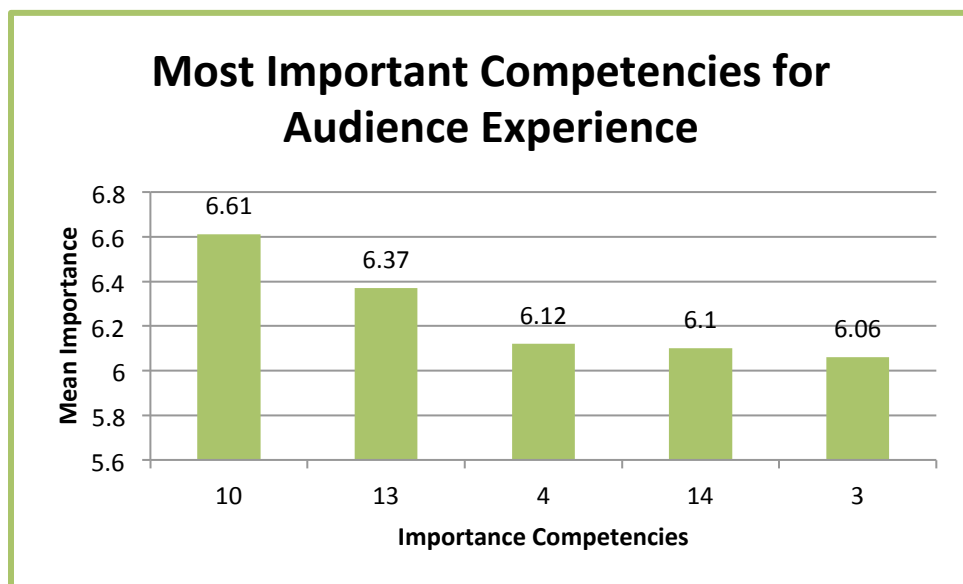


Figure D-1. The five Audience Experience competencies rated by respondents as the most important to their positions.

(10) Display professional, open and patient demeanor in all audience interactions in order to provide excellent customer service.

(13) Display a genuine interest in and respect for the diversity of audience experiences and input.

(4) Explore the relevance that park resources have for different audiences.

(14) Resolve conflicts through empathy and diplomacy.

(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.

Perceptions of Importance - Finding and Assessing Knowledge**Table D-2. Perceptions of Importance - Finding and Assessing Knowledge**

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
<i>Finding and Assessing Knowledge</i>								5.92	1.34
(26) Articulate complex concepts in layman's terms without using jargon or losing accuracy.	0.7	0.3	1.0	2.6	7.2	27.6	60.5	6.40	0.97
(21) Acknowledge history and science as processes of continual revision by updating a site's stories and relevance through research.	1.4	1.7	2.2	5.8	9.4	27.9	51.7	6.11	1.28
(23) Connect historical events with broader cultural and historical trends.	1.0	0.9	2.2	5.5	12.6	30.4	47.2	6.08	1.19
(19) Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research.	1.0	1.2	2.2	5.2	13.8	30.5	46.0	6.05	1.21
(22) Investigate and incorporate contemporary cultural and natural resource issues into discussions with visitors to help them find personal relevance.	1.4	1.5	2.3	5.5	12.4	29.3	47.6	6.05	1.27
(18) Seek out and incorporate diverse and newly discovered primary and secondary source materials.	1.1	1.1	2.2	6.0	16.8	28.9	43.8	5.98	1.23
(25) Connect historical and natural resources to one another.	1.7	2.2	2.6	6.8	13.9	27.8	45.0	5.92	1.37
(27) Explore controversial issues with visitors to pursue an understanding of the diverse perspectives on a topic.	2.3	2.2	2.8	5.5	15.3	30.3	41.5	5.86	1.40
(20) Identify and illuminate embedded biases in historical and scientific data and documents.	1.5	2.1	3.9	7.9	15.2	30.4	39.0	5.81	1.37
(24) Articulate how humans impact natural systems and how natural systems impact humans.	4.2	2.7	3.9	6.1	10.8	25.3	47.0	5.81	1.62

(29)	Facilitate experiences where visitors can investigate ways to create a healthier natural and cultural environment.	4.0	2.8	3.9	10.7	16.2	28.2	34.2	5.54	1.59
(28)	Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource.	3.7	2.9	4.1	11.8	18.6	29.4	29.5	5.45	1.55

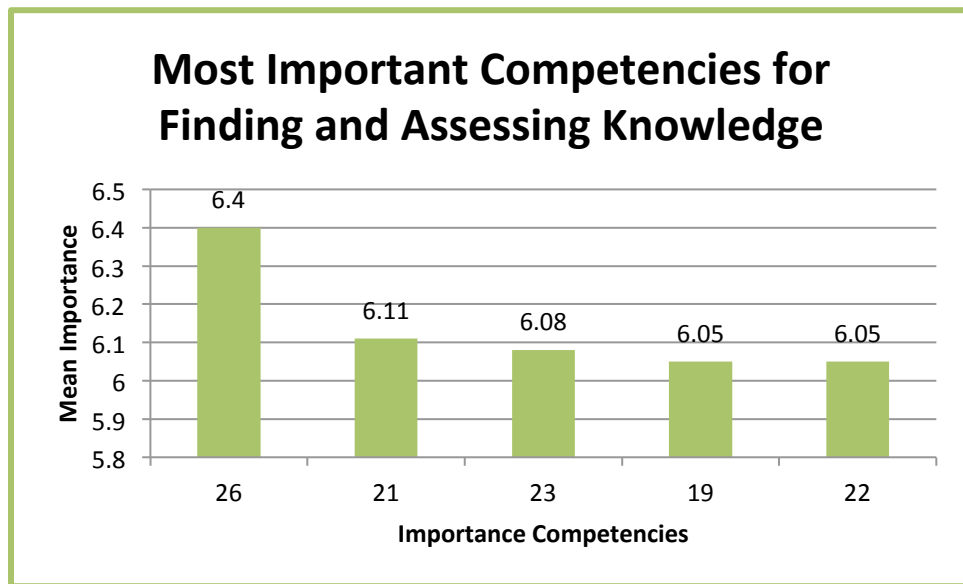


Figure D-2. The five Finding and Assessing Knowledge competencies rated by respondents as the most important to their positions.

- (26) Articulate complex concepts in layman's terms without using jargon or losing accuracy.
- (21) Acknowledge history and science as processes of continual revision by updating a site's stories and relevance through research.
- (23) Connect historical events with broader cultural and historical trends.
- (19) Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research.
- (22) Investigate and incorporate contemporary cultural and natural resource issues into discussions with visitors to help them find personal relevance.

Perceptions of Importance - Appropriate Techniques**Table D-3. Perceptions of Importance - Appropriate Techniques**

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
Appropriate Techniques								5.90	1.47
(32) Use interpretive techniques to intentionally craft opportunities for both intellectual and emotional connections to resource meanings.	2.1	0.9	1.5	2.3	8.4	25.8	59.0	6.27	1.23
(38) Provide appropriate types of orientation, information and audience-centered interpretation in informal visitor contacts.	2.2	1.3	1.5	2.9	8.8	22.5	60.8	6.26	1.28
(30) Select interpretive techniques and content to meet the goals and desired outcomes of the park/site.	2.1	0.3	1.6	3.3	9.2	25.9	57.6	6.25	1.21
(31) Select interpretive techniques and content to address diverse audience needs and interests.	1.7	0.8	1.4	3.7	10.4	28.3	53.8	6.20	1.19
(35) Adjust programs to meet audience needs based on audience questions and cues.	2.8	1.5	1.5	3.3	7.2	26.5	57.2	6.19	1.35
(34) Plan for logistical issues and skillfully manage groups to enhance audience experience and protect resources and visitors.	2.4	1.5	1.1	4.5	9.9	25.0	55.6	6.15	1.32
(33) Develop and present all interpretive products using a cohesive organizational strategy, audience-relevant theme and well-crafted introduction, conclusion and transitions.	2.1	1.6	2.3	4.3	10.7	23.2	55.9	6.13	1.34
(37) Integrate experiential techniques that focus audience attention on the tangible park resources rather than on the interpreter.	3.5	1.3	2.6	4.1	10.3	28.4	49.8	6.01	1.44
(36) Select and integrate props, demonstrations and illustrative media into programs to reveal meanings and relevance.	3.1	1.8	1.6	4.3	14.2	28.2	46.8	5.96	1.41
(48) Comply with technical and legal standards in developing programs and media (NPS editorial guidelines, accessibility mandates, copyright, intellectual property, etc.).	2.6	1.8	2.4	6.2	12.7	25.9	48.4	5.96	1.42

(39)	Write and integrate interpretive text for traditional and digital media.	2.0	2.0	3.3	5.9	12.5	29.2	45.2	5.93	1.39
(46)	Use facilitation and dialogue skills to foster a respectful and proactive exchange of thoughts and ideas.	2.4	2.3	1.6	6.1	15.8	27.0	44.8	5.91	1.40
(47)	Use techniques that foster citizenship skills (such as critical thinking, problem-solving, informed decision making, collaboration and respectful dialogue).	2.9	2.2	2.6	7.8	15.8	27.5	41.1	5.78	1.47
(40)	Design traditional and digital media to use interpretive principles.	3.3	3.2	3.0	6.2	14.5	29.4	40.4	5.75	1.53
(42)	Apply best practices and protocols in developing informational and interpretive content for park websites.	6.8	2.7	3.3	6.5	11.9	29.0	39.9	5.60	1.75
(45)	Address different learning styles and apply multiple intelligence theory in curriculum-based education programs.	7.2	3.3	3.4	7.6	14.5	24.4	39.6	5.51	1.80
(41)	Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium.	6.2	3.4	3.8	8.2	17.3	26.2	34.8	5.45	1.73
(43)	Develop place-based experiential education programs that incorporate state and national curriculum standards.	8.8	3.7	3.1	7.4	13.4	22.0	41.6	5.45	1.90
(44)	Emphasize discovery techniques and the Socratic method in education and interpretive programs.	6.9	2.7	4.1	9.8	20.9	26.8	28.8	5.31	1.71

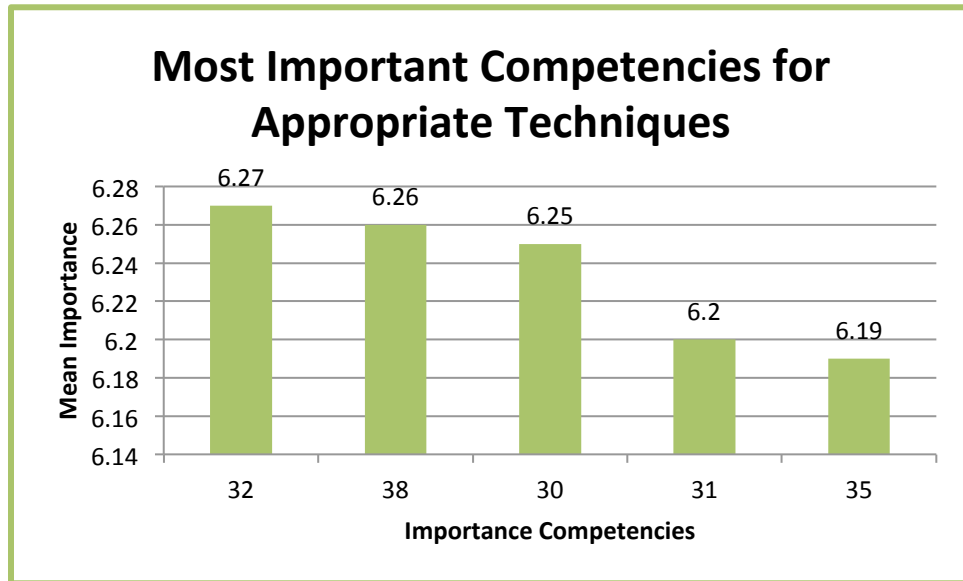


Figure D-3. The five Appropriate Techniques competencies rated by respondents as the most important to their positions.

(32) Use interpretive techniques to intentionally craft opportunities for both intellectual and emotional connections to resource meanings.

(38) Provide appropriate types of orientation, information and audience-centered interpretation in informal visitor contacts.

(30) Select interpretive techniques and content to meet the goals and desired outcomes of the park/site.

(31) Select interpretive techniques and content to address diverse audience needs and interests.

(35) Adjust programs to meet audience needs based on audience questions and cues.

Perceptions of Importance - Partnering, Collaboration and Community Outreach

Table D-4. Perceptions of Importance - Partnering, Collaboration and Community Outreach

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
<i>Partnering, Collaboration and Community Outreach</i>								5.80	1.50
(52) Build a trusting relationship with partners by facilitating open dialogue.	2.3	1.4	2.3	4.4	10.5	28.6	50.4	6.07	1.34
(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	3.8	3.5	3.6	6.4	12.4	29.3	41.1	5.72	1.60

(53)	Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	4.7	2.8	2.3	7.0	14.0	28.0	41.1	5.71	1.61
(50)	Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.	2.3	2.6	2.7	8.8	18.2	30.3	35.2	5.69	1.43

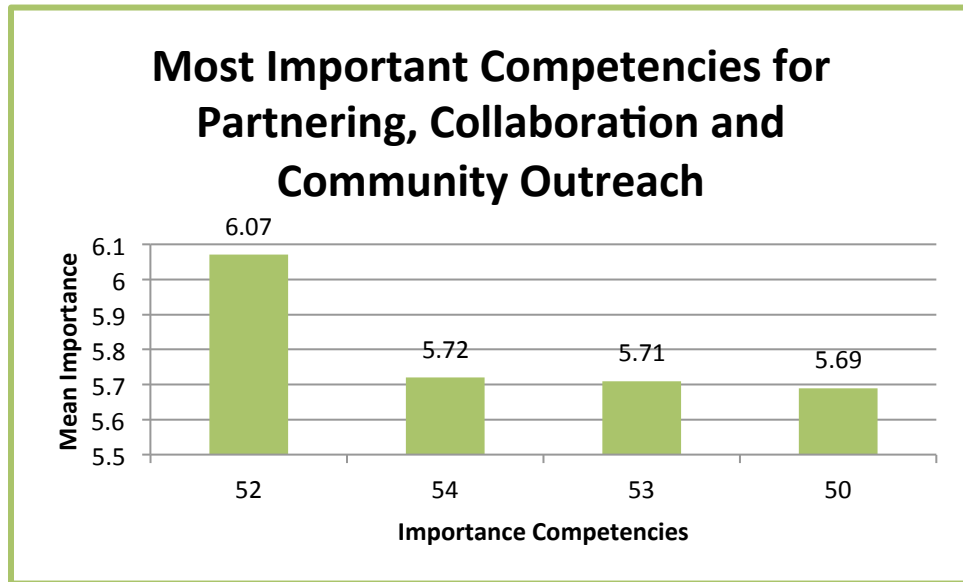


Figure D-4. The four Partnering, Collaboration and Community Outreach competencies rated by respondents as the most important to their positions.

(52) Build a trusting relationship with partners by facilitating open dialogue.

(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.

(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.

(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.

Perceptions of Importance - Planning and Evaluation**Table D-5. Perceptions of Importance - Planning and Evaluation**

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
Planning and Evaluation								5.79	1.53
(57) Prioritize and align interpretative and education products and services with division, park and agency goals and objectives.	2.5	2.2	1.3	4.6	13.6	30.0	45.8	5.98	1.37
(59) Collaborate with colleagues, subject matter experts, partners, potential audience members and other stakeholders during planning and development of all interpretive and educational products and services.	1.8	2.2	3.0	6.3	11.6	30.7	44.3	5.93	1.37
(66) Apply results of formal and informal evaluation to ensure programming meets desired outcomes.	3.0	2.4	2.0	6.1	13.0	30.9	42.6	5.87	1.45
(63) Evaluate effectiveness of interpretive products or services at all stages of development.	3.2	2.2	2.4	6.1	14.5	29.4	42.1	5.83	1.47
(65) Foster an environment conducive for routine, informal, peer-driven evaluation.	2.8	3.1	4.5	6.3	13.0	30.8	39.5	5.74	1.52
(67) Identify training needs of staff, volunteers and partners based on results of evaluation.	5.9	2.8	3.4	5.4	10.6	27.0	44.9	5.73	1.71
(62) Analyze costs and benefits as part of prioritizing programming and allocating resources.	6.8	4.0	3.5	9.0	13.1	27.3	36.3	5.45	1.79

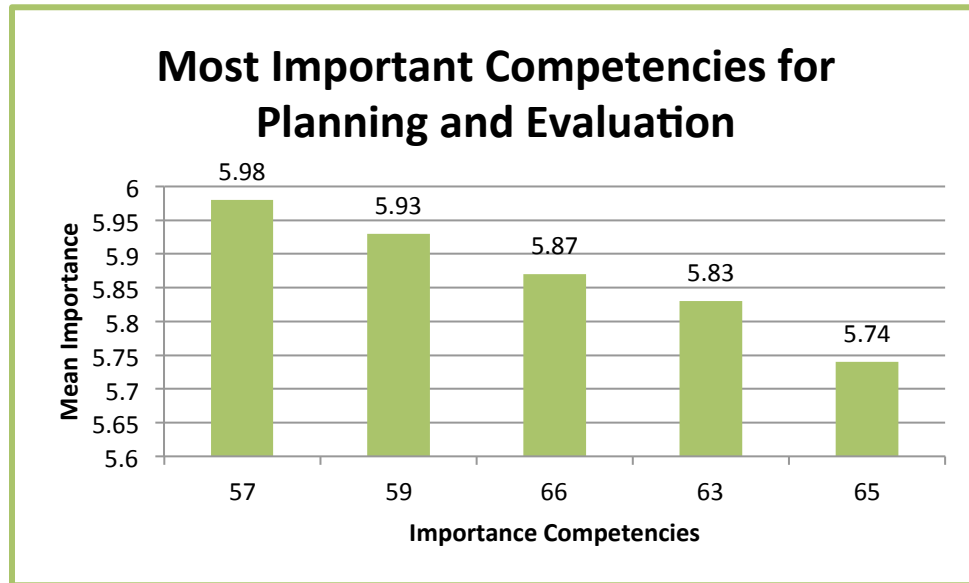


Figure D-5. The five Planning and Evaluation competencies rated by respondents as the most important to their positions.

(57) Prioritize and align interpretative and education products and services with division, park and agency goals and objectives.

(59) Collaborate with colleagues, subject matter experts, partners, potential audience members and other stakeholders during planning and development of all interpretive and educational products and services.

(66) Apply results of formal and informal evaluation to ensure programming meets desired outcomes.

(63) Evaluate effectiveness of interpretive products or services at all stages of development.

(65) Foster an environment conducive for routine, informal, peer-driven evaluation.

Perceptions of Importance - Professional Development of Self and Others**Table D-6. Perceptions of Importance - Professional Development of Self and Others**

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
Professional Development of Self and Others								6.07	1.26
(81) Practice effective listening and communication skills to provide constructive feedback.	1.4	0.7	1.7	2.7	8.5	26.9	58.1	6.29	1.14
(79) Use feedback to improve personal performance.	1.0	0.2	1.4	4.0	9.2	28.4	55.8	6.28	1.07
(76) Foster an environment of interpersonal trust, and open conversations where peers share insights and feedback.	1.1	0.9	1.4	4.1	9.8	28.1	54.6	6.23	1.15
(68) Plan for self-development and continuously pursue professional growth opportunities.	1.1	1.1	1.4	5.1	9.9	27.8	53.6	6.19	1.18
(72) Identify and minimize the impact of own personal biases.	1.0	1.3	1.0	4.4	12.2	30.1	50.0	6.16	1.15
(69) Keep current on interpretive best practices, theories and changes in the field of interpretation.	1.4	1.5	2.3	5.0	11.9	27.7	50.2	6.09	1.27
(80) Identify and articulate elements of success when critiquing the work of peers.	2.5	0.9	2.2	4.1	10.8	30.4	49.0	6.07	1.32
(82) Communicate positive, provisional and specific verbal and written feedback in peer mentoring and coaching relationships.	3.5	0.8	2.1	4.8	10.3	27.8	50.8	6.04	1.41
(78) Use self-assessment and evaluative feedback from others to gauge effectiveness of communication methods.	1.5	0.9	2.1	6.3	14.6	32.8	41.8	5.97	1.23
(70) Develop and experiment with new interpretive techniques.	2.5	1.6	2.7	6.4	15.3	29.9	41.6	5.86	1.39
(77) Seek out and participate in peer collaboration and mentoring relationships.	2.4	1.5	3.1	6.6	17.5	29.7	39.3	5.82	1.38
(71) Share interpretive success with peers within workgroup and broader communities of practice.	2.5	1.2	3.5	6.4	17.7	30.6	38.1	5.80	1.38

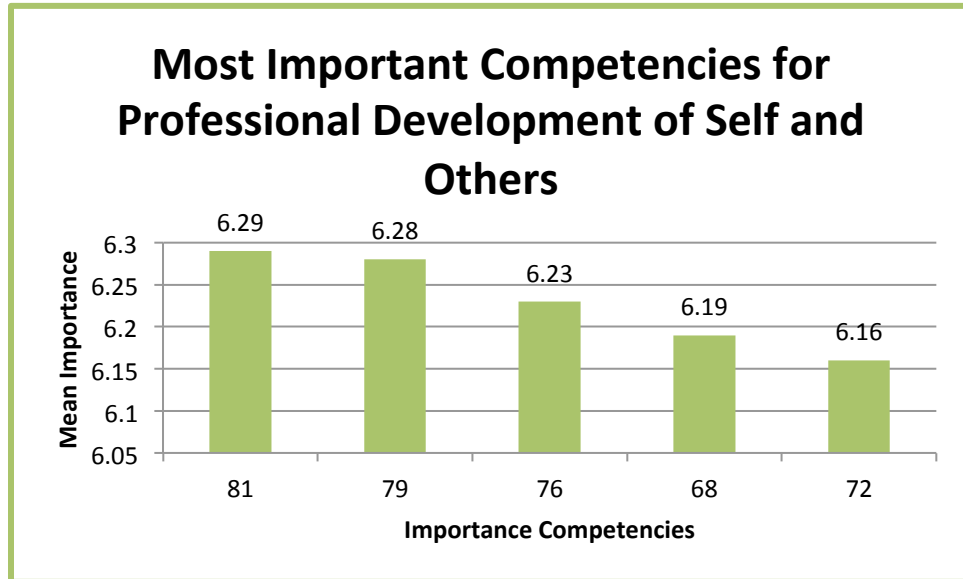


Figure D-6. The five Professional Development of Self and Others competencies rated by respondents as the most important to their positions.

(81) Practice effective listening and communication skills to provide constructive feedback.

(79) Use feedback to improve personal performance.

(76) Foster an environment of interpersonal trust, and open conversations where peers share insights and feedback.

(68) Plan for self-development and continuously pursue professional growth opportunities.

(72) Identify and minimize the impact of own personal biases.

Appendix E

Preparedness Tables and Charts

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Perceptions of Personal Level of Preparedness - Audience Experience**Table E-1. Perceptions of Preparedness - Audience Experience**

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
Audience Experience									4.78	1.59
(9) Identify and engage non-visiting audiences through using existing and emerging media technologies.	5.7	7.5	14.0	15.5	19.7	17.8	12.6	7.3	3.99	1.70
(8) Identify and engage non-visiting audiences through community outreach efforts.	4.5	7.0	10.9	13.6	18.0	19.5	16.9	9.6	4.27	1.73
(6) Apply principles of current learning theory to engage audience members of different developmental stages.	3.6	7.5	9.6	14.7	20.0	16.9	17.2	10.4	4.27	1.74
(15) Update interpretive programming based on changing societal trends.	3.8	6.0	10.1	14.5	19.1	21.0	17.5	8.1	4.29	1.66
(2) Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.	2.6	4.1	11.3	16.3	20.9	19.4	15.7	9.8	4.30	1.64
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	1.3	5.6	9.1	15.2	21.7	20.2	16.7	10.2	4.35	1.65
(16) Identify and integrate the educational objectives and/or curriculum standards of groups.	4.8	5.2	9.3	12.5	15.3	17.9	19.3	15.6	4.59	1.77
(4) Explore the relevance that park resources have for different audiences.	0.8	2.4	6.6	12.4	22.1	21.5	20.5	13.8	4.72	1.54
(7) Adapt interpretation as needed to meet the physical, emotional, cultural and cognitive needs of audience members.	2.1	3.7	6.4	11.5	15.1	23.8	24.0	13.4	4.78	1.60

(5)	Plan interpretation based on knowledge of specific audiences.	1.4	2.6	6.6	11.3	15.5	24.6	22.0	15.8	4.85	1.58
(17)	Connect visitors with related resources and experiences outside of the park.	1.9	3.3	6.1	8.3	14.8	22.8	25.1	17.7	4.98	1.60
(12)	Encourage visitors to safely express personal viewpoints and hear the perspectives of others.	2.5	2.7	3.6	10.1	15.5	22.3	24.8	18.4	5.04	1.54
(11)	Facilitate collaborative learning by encouraging audiences to participate and contribute to their interpretive experiences.	2.2	3.0	4.6	8.5	14.0	21.5	28.3	17.8	5.07	1.56
(14)	Resolve conflicts through empathy and diplomacy.	1.9	2.8	3.6	8.3	13.1	20.4	28.1	21.9	5.21	1.55
(13)	Display a genuine interest in and respect for the diversity of audience experiences and input.	1.6	1.7	2.7	5.3	8.6	17.4	31.0	31.7	5.61	1.43
(10)	Display professional, open and patient demeanor in all audience interactions in order to provide excellent customer service.	1.1	0.7	0.9	2.1	3.9	9.3	29.8	52.2	6.22	1.12

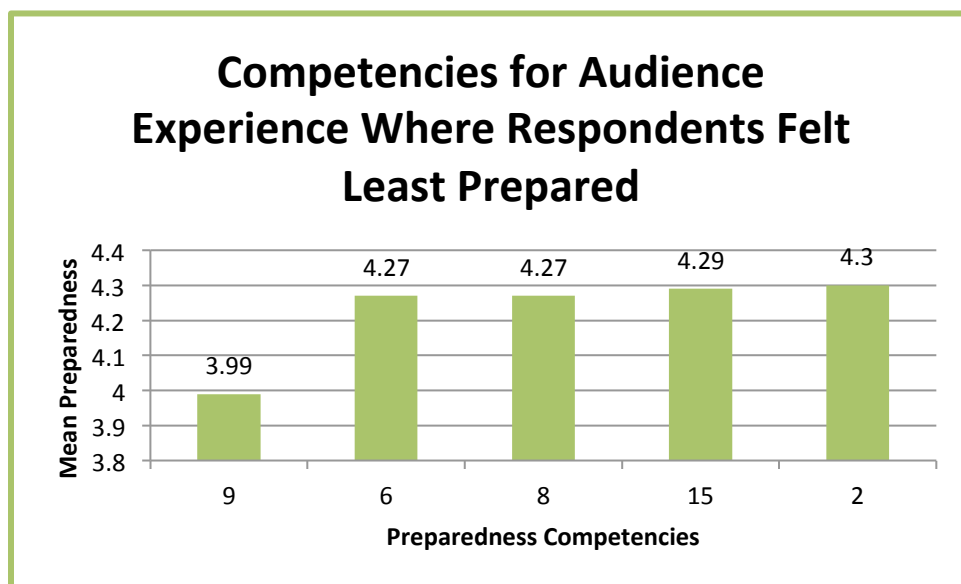


Figure E-1. The five Audience Experience competencies rated by respondents where they felt least prepared.

- (9) Identify and engage non-visiting audiences through using existing and emerging media technologies.
- (6) Apply principles of current learning theory to engage audience members of different developmental stages.
- (8) Identify and engage non-visiting audiences through community outreach efforts.
- (15) Update interpretive programming based on changing societal trends.
- (2) Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.

Perceptions of Personal Level of Preparedness - Finding and Assessing Knowledge

Table E-2. Perceptions of Preparedness - Finding and Assessing Knowledge

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
<i>Finding and Assessing Knowledge</i>									4.94	1.58
(28) Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource.	5.1	6.4	8.7	13.5	20.2	21.5	16.2	8.5	4.31	1.65
(29) Facilitate experiences where visitors can investigate ways to create a healthier natural and cultural environment.	5.2	5.1	9.0	14.5	18.3	21.3	16.8	9.7	4.38	1.65
(20) Identify and illuminate embedded biases in historical and scientific data and documents.	2.8	5.4	7.2	12.6	17.3	21.1	20.4	13.2	4.60	1.69
(27) Explore controversial issues with visitors to pursue an understanding of the diverse perspectives on a topic.	2.8	4.0	5.7	10.6	15.3	23.8	23.6	14.3	4.82	1.61

(19)	Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research.	1.9	4.0	6.7	9.5	16..4	20.4	23.9	17.3	4.87	1.66
(21)	Acknowledge history and science as processes of continual revision by updating a site's stories and relevance through research.	2.7	4.5	6.6	9.7	13.0	19.8	23.5	20.2	4.93	1.72
(22)	Investigate and incorporate contemporary cultural and natural resource issues into discussions with visitors to help them find personal relevance.	2.4	3.0	4.0	8.3	16.8	22.0	27.4	16.1	5.02	1.52
(18)	Seek out and incorporate diverse and newly discovered primary and secondary source materials.	1.9	2.9	4.7	8.3	16.8	19.8	25.9	19.7	5.06	1.58
(24)	Articulate how humans impact natural systems and how natural systems impact humans.	5.7	2.3	4.0	6.5	15.2	20.7	25.3	20.3	5.17	1.52
(23)	Connect historical events with broader cultural and historical trends.	1.6	2.4	3.4	7.5	14.7	21.8	28.5	20.0	5.19	1.49
(25)	Connect historical and natural resources to one another.	2.6	3.4	2.9	6.8	13.7	21.3	27.5	21.8	5.22	1.54
(26)	Articulate complex concepts in layman's terms without using jargon or losing accuracy.	1.0	1.6	2.6	3.4	8.1	17.5	32.6	33.2	5.71	1.37

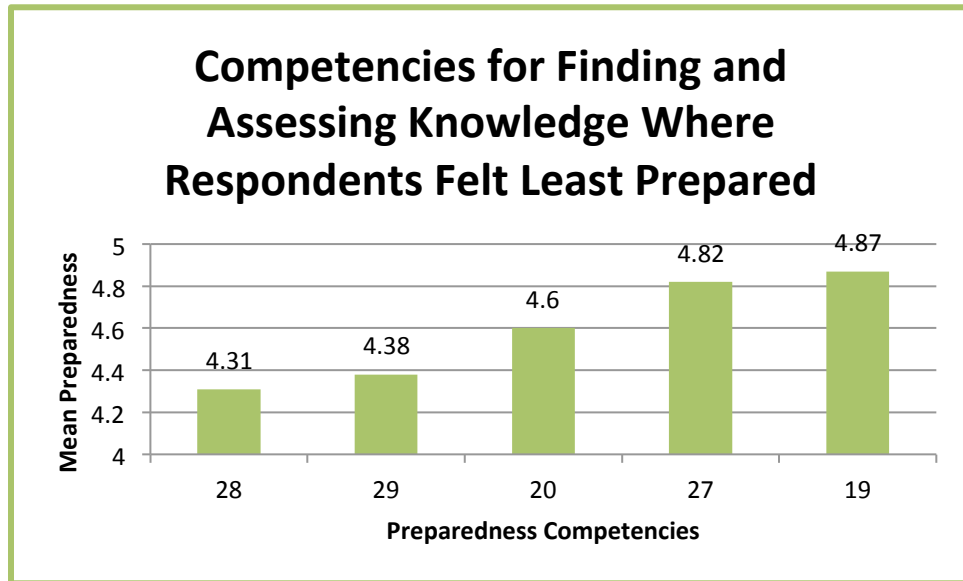


Figure E-2. The five Finding and Assessing Knowledge competencies rated by respondents where they felt least prepared.

(28) Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource.

(29) Facilitate experiences where visitors can investigate ways to create a healthier natural and cultural environment.

(20) Identify and illuminate embedded biases in historical and scientific data and documents.

(27) Explore controversial issues with visitors to pursue an understanding of the diverse perspectives on a topic.

(19) Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research.

Perceptions of Personal Level of Preparedness - Appropriate Techniques**Table E-3. Perceptions of Preparedness - Appropriate Techniques**

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
Appropriate Techniques									5.04	1.59
(41) Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium.	10.0	8.7	10.3	13.2	18.0	17.3	14.1	8.4	4.12	1.77
(42) Apply best practices and protocols in developing informational and interpretive content for park websites.	11.7	8.3	8.6	12.4	17.2	18.5	14.5	8.8	4.22	1.76
(44) Emphasize discovery techniques and the Socratic method in education and interpretive programs.	9.4	8.0	8.1	11.4	17.1	18.4	14.8	12.8	4.38	1.81
(45) Address different learning styles and apply multiple intelligence theory in curriculum-based education programs.	10.4	8.1	8.5	10.2	15.2	15.0	17.9	14.6	4.48	1.88
(48) Comply with technical and legal standards in developing programs and media (NPS editorial guidelines, accessibility mandates, copyright, intellectual property, etc.).	4.5	6.4	8.3	10.7	15.6	20.0	20.1	14.6	4.60	1.77
(43) Develop place-based experiential education programs that incorporate state and national curriculum standards.	12.3	6.8	7.4	11.4	13.0	15.7	15.5	18.0	4.62	1.88
(40) Design traditional and digital media to use interpretive principles.	7.6	5.0	6.1	10.5	15.5	22.3	20.7	12.4	4.68	1.66
(47) Use techniques that foster citizenship skills (such as critical thinking, problem-solving, informed decision making, collaboration and respectful dialogue).	3.6	4.9	6.5	11.3	17.0	22.5	19.0	15.2	4.69	1.68
(46) Use facilitation and dialogue skills to foster a respectful and proactive exchange of thoughts and ideas.	3.7	4.1	5.4	8.8	16.4	21.5	21.9	18.2	4.91	1.64

(39) Write and integrate interpretive text for traditional and digital media.	5.2	3.3	5.4	6.4	13.9	20.6	25.3	19.9	5.10	1.61
(31) Select interpretive techniques and content to address diverse audience needs and interests.	1.9	2.5	2.4	7.8	13.5	24.2	28.9	18.7	5.20	1.45
(37) Integrate experiential techniques that focus audience attention on the tangible park resources rather than on the interpreter.	3.9	2.5	2.6	7.5	12.6	21.1	27.5	22.3	5.28	1.50
(33) Develop and present all interpretive products using a cohesive organizational strategy, audience-relevant theme and well-crafted introduction, conclusion and transitions.	2.3	2.1	3.0	5.6	8.8	18.2	30.2	29.7	5.53	1.48
(30) Select interpretive techniques and content to meet the goals and desired outcomes of the park/site.	2.2	1.7	2.0	4.6	9.7	20.6	32.9	26.2	5.55	1.36
(32) Use interpretive techniques to intentionally craft opportunities for both intellectual and emotional connections to resource meanings.	2.0	1.3	2.5	6.3	8.6	20.6	28.7	29.9	5.56	1.41
(36) Select and integrate props, demonstrations and illustrative media into programs to reveal meanings and relevance.	3.7	1.4	2.5	5.6	8.2	19.2	29.6	29.8	5.59	1.41
(34) Plan for logistical issues and skillfully manage groups to enhance audience experience and protect resources and visitors.	3.5	1.9	2.0	5.0	11.2	15.8	26.8	33.8	5.62	1.46
(35) Adjust programs to meet audience needs based on audience questions and cues.	3.8	1.4	2.5	3.9	6.3	18.5	30.5	33.2	5.73	1.36
(38) Provide appropriate types of orientation, information and audience-centered interpretation in informal visitor contacts.	2.3	1.4	1.3	3.8	7.4	14.6	27.2	42.1	5.89	1.33

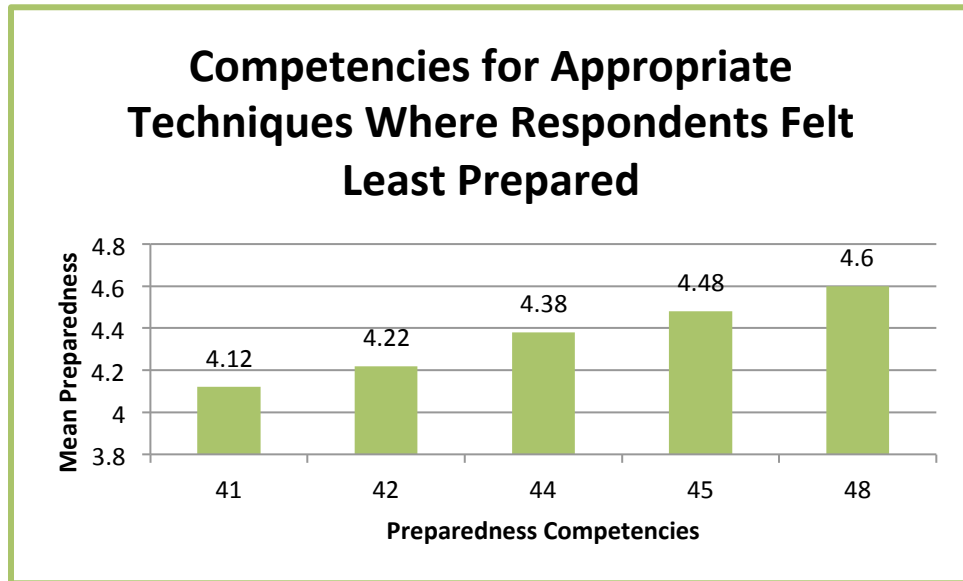


Figure E-3. The five Appropriate Techniques competencies rated by respondents where they felt least prepared.

(41) Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium.

(42) Apply best practices and protocols in developing informational and interpretive content for park websites.

(44) Emphasize discovery techniques and the Socratic method in education and interpretive programs.

(45) Address different learning styles and apply multiple intelligence theory in curriculum-based education programs.

(48) Comply with technical and legal standards in developing programs and media (NPS editorial guidelines, accessibility mandates, copyright, intellectual property, etc.).

Perceptions of Personal Level of Preparedness - Partnering, Collaboration and Community Outreach

Table E-4. Perceptions of Preparedness - Partnering, Collaboration and Community Outreach

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
Partnering, Collaboration and Community Outreach									4.88	1.67
(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	6.6	4.2	7.9	10.0	15.5	20.4	19.2	16.3	4.74	1.71
(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.	4.1	3.6	6.5	9.8	15.9	20.4	23.4	16.2	4.86	1.64
(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	6.7	4.0	6.1	11.0	15.0	18.2	20.0	19.1	4.86	1.64
(52) Build a trusting relationship with partners by facilitating open dialogue.	3.6	3.7	5.6	9.5	11.6	18.9	24.6	22.5	5.07	1.69

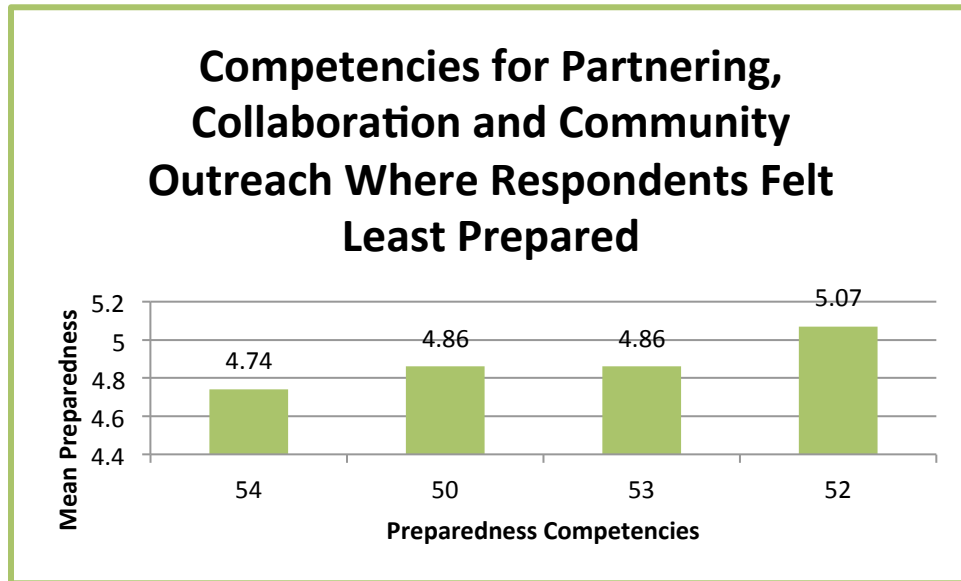


Figure E-4. The four Partnering, Collaboration and Community Outreach competencies rated by respondents where they felt least prepared.

(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.

(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.

(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.

(52) Build a trusting relationship with partners by facilitating open dialogue.

Perceptions of Personal Level of Preparedness- Planning and Evaluation

Table E-5. Perceptions of Preparedness - Planning and Evaluation

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
<i>Planning and Evaluation</i>									4.69	1.77
(62) Analyze costs and benefits as part of prioritizing programming and allocating resources.	12.0	9.4	10.1	11.6	18.2	16.6	12.0	10.1	4.12	1.82
(63) Evaluate effectiveness of interpretive products or services at all stages of development.	7.2	7.1	9.1	11.0	17.9	19.5	15.6	12.6	4.41	1.77

(67)	Identify training needs of staff, volunteers and partners based on results of evaluation.	11.1	6.0	9.5	11.5	15.4	19.4	15.8	11.3	4.41	1.75
(66)	Apply results of formal and informal evaluation to ensure programming meets desired outcomes.	5.5	5.8	7.5	13.3	15.8	18.8	18.6	14.8	4.58	1.75
(65)	Foster an environment conducive for routine, informal, peer-driven evaluation.	5.5	5.3	7.9	13.2	15.7	17.5	19.5	15.3	4.61	1.76
(59)	Collaborate with colleagues, subject matter experts, partners, potential audience members and other stakeholders during planning and development of all interpretive and educational products and services.	4.7	3.2	6.0	8.4	14.9	22.2	22.6	18.0	4.96	1.62
(57)	Prioritize and align interpretative and education products and services with division, park and agency goals and objectives.	6.0	2.9	4.9	8.7	13.2	23.2	22.6	18.5	5.73	1.94

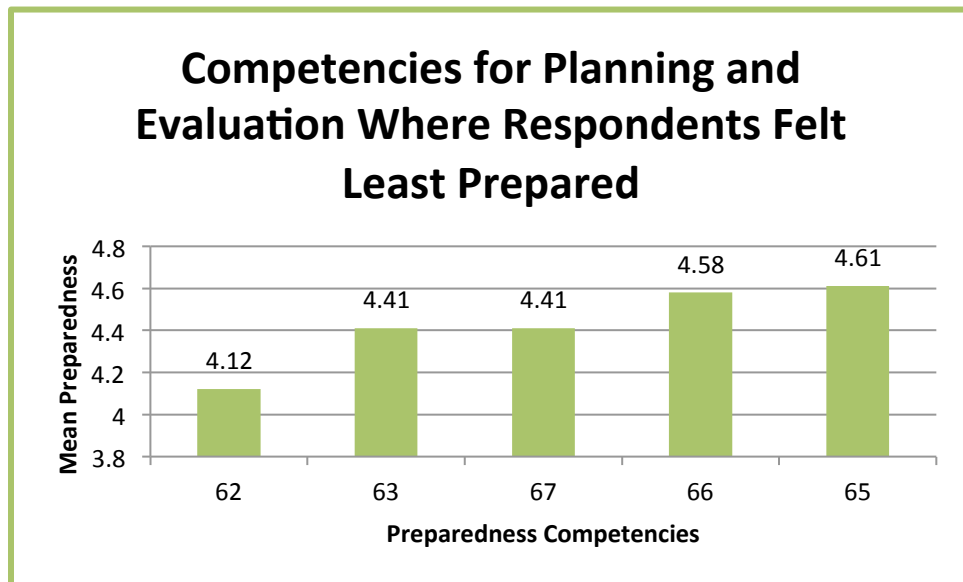


Figure E-5. The five Planning and Evaluation competencies rated by respondents where they felt least prepared.

- (62) Analyze costs and benefits as part of prioritizing programming and allocating resources.
- (63) Evaluate effectiveness of interpretive products or services at all stages of development.
- (67) Identify training needs of staff, volunteers and partners based on results of evaluation.
- (66) Apply results of formal and informal evaluation to ensure programming meets desired outcomes.
- (65) Foster an environment conducive for routine, informal, peer-driven evaluation.

Perceptions of Personal Level of Preparedness - Professional Development of Self and Others

Table E-6. Perceptions of Preparedness - Professional Development of Self and Others										
Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
<i>Professional Development of Self and Others</i>									4.94	1.62
(70) Develop and experiment with new interpretive techniques.	3.0	4.5	6.7	11.4	20.8	21.4	18.7	13.7	4.64	1.63
(68) Plan for self-development and continuously pursue professional growth opportunities.	1.4	5.6	8.8	10.5	16.0	21.9	20.0	15.7	4.65	1.74
(69) Keep current on interpretive best practices, theories and changes in the field of interpretation.	2.2	4.3	8.5	10.9	16.9	22.8	19.9	14.6	4.67	1.67
(77) Seek out and participate in peer collaboration and mentoring relationships.	2.4	5.0	7.2	13.5	15.4	21.2	19.0	16.3	4.67	1.72
(71) Share interpretive success with peers within workgroup and broader communities of practice.	3.4	5.5	5.9	12.2	16.6	20.7	21.0	14.7	4.69	1.69
(78) Use self-assessment and evaluative feedback from others to gauge effectiveness of communication methods.	1.8	3.4	6.3	11.3	18.3	20.5	23.0	15.4	4.80	1.62
(76) Foster an environment of interpersonal trust, and open conversations where peers share insights and feedback.	0.9	4.4	5.8	7.1	14.3	21.4	25.8	20.3	5.03	1.66

(80)	Identify and articulate elements of success when critiquing the work of peers.	3.7	3.1	5.4	6.7	13.8	18.5	26.4	22.5	5.16	1.62
(72)	Identify and minimize the impact of own personal biases.	1.3	2.1	3.1	6.3	15.5	24.4	29.1	18.2	5.20	1.42
(82)	Communicate positive, provisional and specific verbal and written feedback in peer mentoring and coaching relationships.	5.4	3.5	3.8	7.8	13.1	17.1	25.2	24.2	5.21	1.63
(79)	Use feedback to improve personal performance.	1.3	2.1	3.9	8.1	13.1	19.1	28.8	23.7	5.27	1.53
(81)	Practice effective listening and communication skills to provide constructive feedback.	1.5	2.6	3.8	5.9	12.5	21.2	27.9	24.7	5.32	1.52

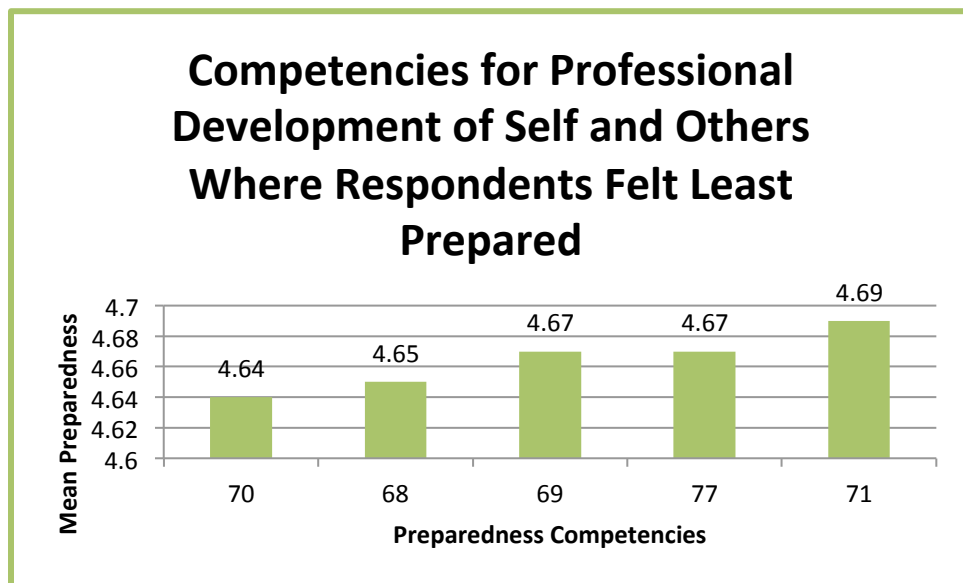


Figure E-6. The five Professional Development of Self and Others competencies rated by respondents where they felt least prepared.

- (70) Develop and experiment with new interpretive techniques.
- (68) Plan for self-development and continuously pursue professional growth opportunities.
- (69) Keep current on interpretive best practices, theories and changes in the field of interpretation.
- (77) Seek out and participate in peer collaboration and mentoring relationships.
- (71) Share interpretive success with peers within workgroup and broader communities of practice.

Appendix F

Mean Weighted Discrepancy Score Tables and Charts

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Mean Weighted Discrepancy Scores - Audience Experience**Table F-1. Mean Weighted Discrepancy Scores- Audience Experience**

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
Audience Experience	5.92	4.78	-7.08	10.11
(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.	6.06	4.35	-10.60	10.94
(9) Identify and engage non-visiting audiences through using existing and emerging media technologies.	5.64	3.99	-9.89	11.29
(15) Update interpretive programming based on changing societal trends.	5.89	4.29	-9.89	11.35
(4) Explore the relevance that park resources have for different audiences.	6.12	4.72	-8.76	10.27
(6) Apply principles of current learning theory to engage audience members of different developmental stages.	5.65	4.27	-8.23	10.44
(7) Adapt interpretation as needed to meet the physical, emotional, cultural and cognitive needs of audience members.	6.05	4.78	-8.04	10.29
(8) Identify and engage non-visiting audiences through community outreach efforts.	5.59	4.27	-7.91	11.14
(2) Gather and synthesize formal and informal research on audience motivations, needs and barriers to participation.	5.63	4.30	-7.89	10.13
(5) Plan interpretation based on knowledge of specific audiences.	5.98	4.85	-7.01	10.24
(16) Identify and integrate the educational objectives and/or curriculum standards of groups.	5.66	4.59	-6.74	10.60
(11) Facilitate collaborative learning by encouraging audiences to participate and contribute to their interpretive experiences.	5.97	5.07	-5.83	9.57
(14) Resolve conflicts through empathy and diplomacy.	6.10	5.21	-5.79	9.91
(12) Encourage visitors to safely express personal viewpoints and hear the perspectives of others.	5.86	5.04	-5.13	9.55
(13) Display a genuine interest in and respect for the diversity of audience experiences and input.	6.37	5.61	-5.12	9.11
(17) Connect visitors with related resources and experiences outside of the park.	5.58	4.98	-3.53	9.26
(10) Display professional, open and patient demeanor in all audience interactions in order to provide excellent customer service.	6.61	6.22	-2.88	7.68

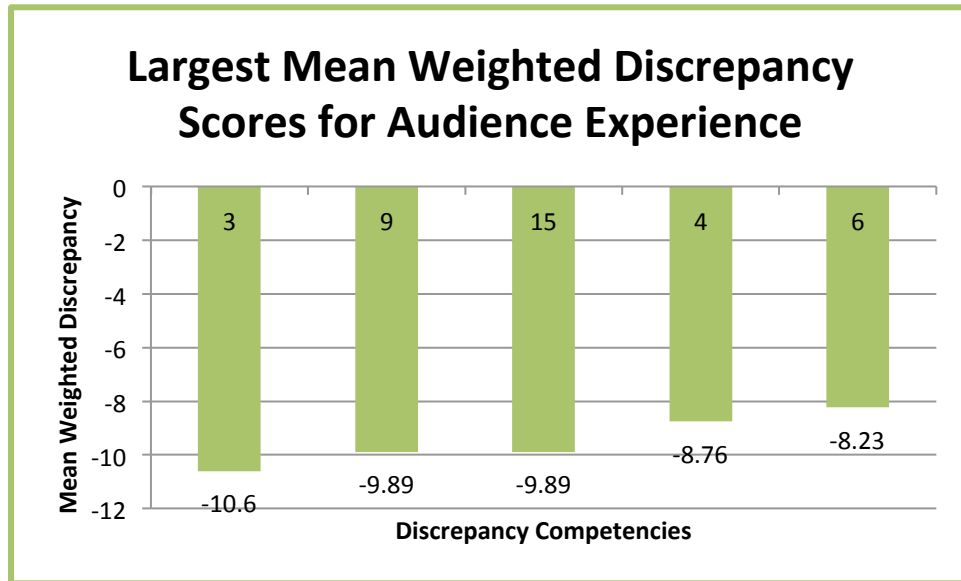


Figure F-1. The five competencies with the largest mean weighted discrepancy.

(3) Assess the needs of audiences from diverse backgrounds, age groups, nationalities, abilities and cultures.

(9) Identify and engage non-visiting audiences through using existing and emerging media technologies.

(15) Update interpretive programming based on changing societal trends.

(4) Explore the relevance that park resources have for different audiences.

(6) Apply principles of current learning theory to engage audience members of different developmental stages.

Mean Weighted Discrepancy Scores - Finding and Assessing Knowledge

Table F-2. Mean Weighted Discrepancy Scores - Finding and Assessing Knowledge

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
<i>Finding and Assessing Knowledge</i>	5.92	4.94	-6.30	9.65
(21) Acknowledge history and science as processes of continual revision by updating a site's stories and relevance through research.	6.11	4.93	-7.68	10.39
(20) Identify and illuminate embedded biases in historical and scientific data and documents.	5.81	4.60	-7.53	9.89

(19)	Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research.	6.05	4.87	-7.49	10.19
(29)	Facilitate experiences where visitors can investigate ways to create a healthier natural and cultural environment.	5.54	4.38	-7.23	9.76
(28)	Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource.	5.45	4.31	-7.00	9.51
(27)	Explore controversial issues with visitors to pursue an understanding of the diverse perspectives on a topic.	5.86	4.82	-6.66	10.20
(22)	Investigate and incorporate contemporary cultural and natural resource issues into discussions with visitors to help them find personal relevance.	6.05	5.02	-6.62	9.72
(18)	Seek out and incorporate diverse and newly discovered primary and secondary source materials.	5.98	5.06	-5.73	9.86
(23)	Connect historical events with broader cultural and historical trends.	6.08	5.19	-5.68	9.47
(26)	Articulate complex concepts in layman's terms without using jargon or losing accuracy.	6.40	5.71	-4.70	8.81
(25)	Connect historical and natural resources to one another.	5.92	5.22	-4.67	9.26
(24)	Articulate how humans impact natural systems and how natural systems impact humans.	5.81	5.17	-4.63	8.77

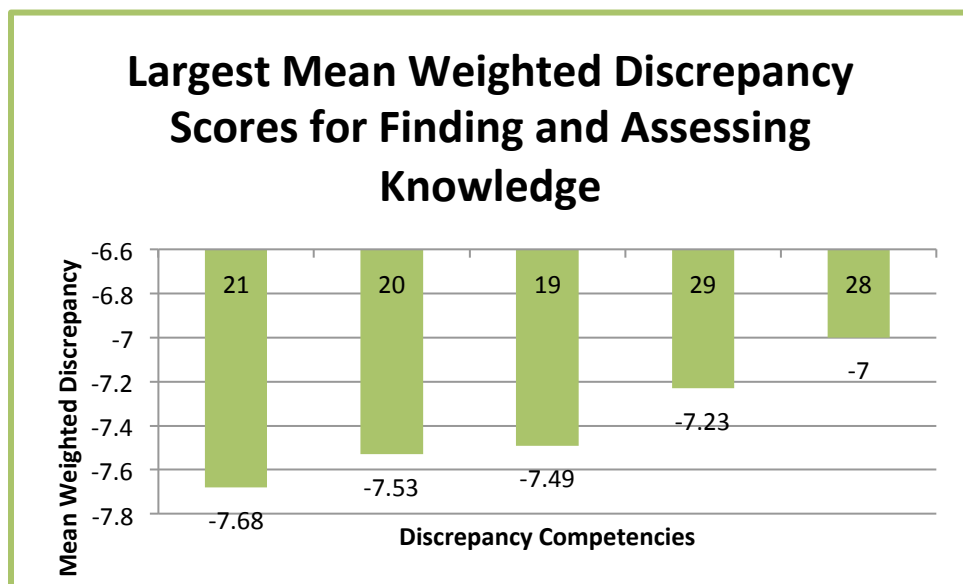


Figure F-2. The five competencies with the largest mean weighted discrepancy scores.

(21) Acknowledge history and science as processes of continual revision by updating a site’s stories and relevance through research.

(20) Identify and illuminate embedded biases in historical and scientific data and documents.

(19) Develop ongoing collaborative relationships with subject matter experts to remain current with issues and research.

(29) Facilitate experiences where visitors can investigate ways to create a healthier natural and cultural environment.

(28) Involve visitors in active investigations, to discover both evidence-based and personal truths related to the resource.

Mean Weighted Discrepancy Scores - Appropriate Techniques

Table F-3. Mean Weighted Discrepancy Scores - Appropriate Techniques				
Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
<i>Appropriate Techniques</i>	5.90	5.04	-5.87	9.83
(42) Apply best practices and protocols in developing informational and interpretive content for park websites.	5.60	4.22	-9.09	11.20
(48) Comply with technical and legal standards in developing programs and media (NPS editorial guidelines, accessibility mandates, copyright, intellectual property, etc.).	5.96	4.60	-8.76	11.15
(41) Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium.	5.45	4.12	-8.50	11.08
(45) Address different learning styles and apply multiple intelligence theory in curriculum-based education programs.	5.51	4.48	-7.17	10.09
(40) Design traditional and digital media to use interpretive principles.	5.75	4.68	-7.02	10.42
(47) Use techniques that foster citizenship skills (such as critical thinking, problem-solving, informed decision making, collaboration and respectful dialogue).	5.78	4.69	-6.79	10.11
(31) Select interpretive techniques and content to address diverse audience needs and interests.	6.20	5.20	-6.63	9.54
(46) Use facilitation and dialogue skills to foster a respectful and proactive exchange of thoughts and ideas.	5.91	4.91	-6.56	10.14
(43) Develop place-based experiential education programs that incorporate state and national curriculum standards.	5.45	4.62	-6.41	10.54

(44)	Emphasize discovery techniques and the Socratic method in education and interpretive programs.	5.31	4.38	-6.23	9.35
(39)	Write and integrate interpretive text for traditional and digital media.	5.93	5.10	-5.41	10.41
(37)	Integrate experiential techniques that focus audience attention on the tangible park resources rather than on the interpreter.	6.01	5.28	-5.22	9.34
(32)	Use interpretive techniques to intentionally craft opportunities for both intellectual and emotional connections to resource meanings.	6.27	5.56	-5.01	8.93
(30)	Select interpretive techniques and content to meet the goals and desired outcomes of the park/site.	6.25	5.55	-4.99	8.99
(33)	Develop and present all interpretive products using a cohesive organizational strategy, audience-relevant theme and well-crafted introduction, conclusion and transitions.	6.13	5.53	-4.22	9.79
(34)	Plan for logistical issues and skillfully manage groups to enhance audience experience and protect resources and visitors.	6.15	5.62	-4.05	9.23
(35)	Adjust programs to meet audience needs based on audience questions and cues.	6.19	5.73	-3.65	8.93
(36)	Select and integrate props, demonstrations and illustrative media into programs to reveal meanings and relevance.	5.96	5.59	-2.90	9.02
(38)	Provide appropriate types of orientation, information and audience-centered interpretation in informal visitor contacts.	6.26	5.89	-2.83	8.58

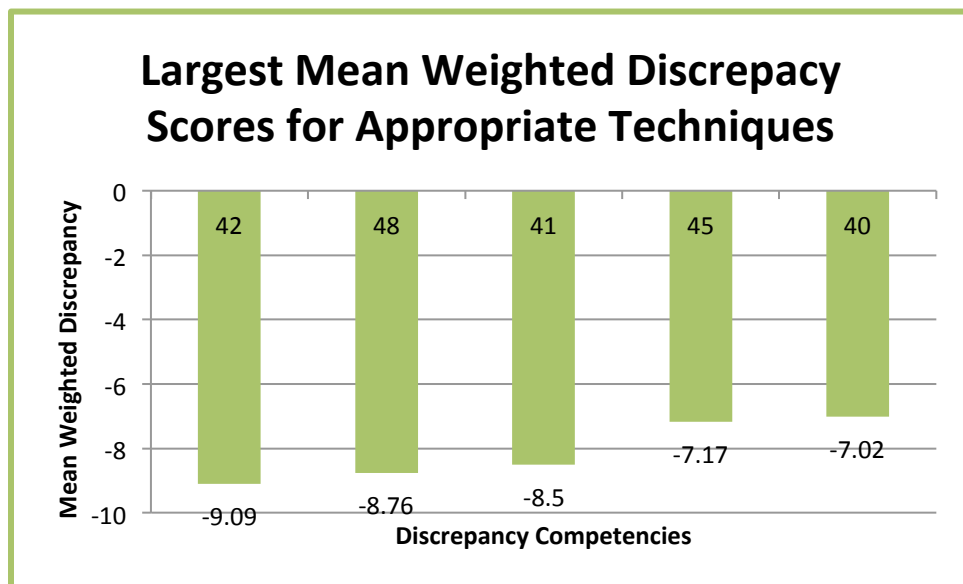


Figure F-3. The five competencies with the largest mean weighted discrepancy scores.

(42) Apply best practices and protocols in developing informational and interpretive content for park websites.

(48) Comply with technical and legal standards in developing programs and media (NPS editorial guidelines, accessibility mandates, copyright, intellectual property, etc.).

(41) Develop and curate content for social media using protocols, conventions and interpretive strategies appropriate to the medium.

(45) Address different learning styles and apply multiple intelligence theory in curriculum-based education programs.

(40) Design traditional and digital media to use interpretive principles.

Mean Weighted Discrepancy Scores - Partnering, Collaboration and Community Outreach

Table F-4. Mean Weighted Discrepancy Scores - Partnering, Collaboration and Community Outreach

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
<i>Partnering, Collaboration and Community Outreach</i>	5.94	4.72	-6.05	10.34
(52) Build a trusting relationship with partners by facilitating open dialogue.	6.07	5.07	-6.57	10.78
(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.	5.72	4.74	-6.45	10.30
(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.	5.71	4.86	-5.93	10.59
(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.	5.69	4.86	-5.23	9.67

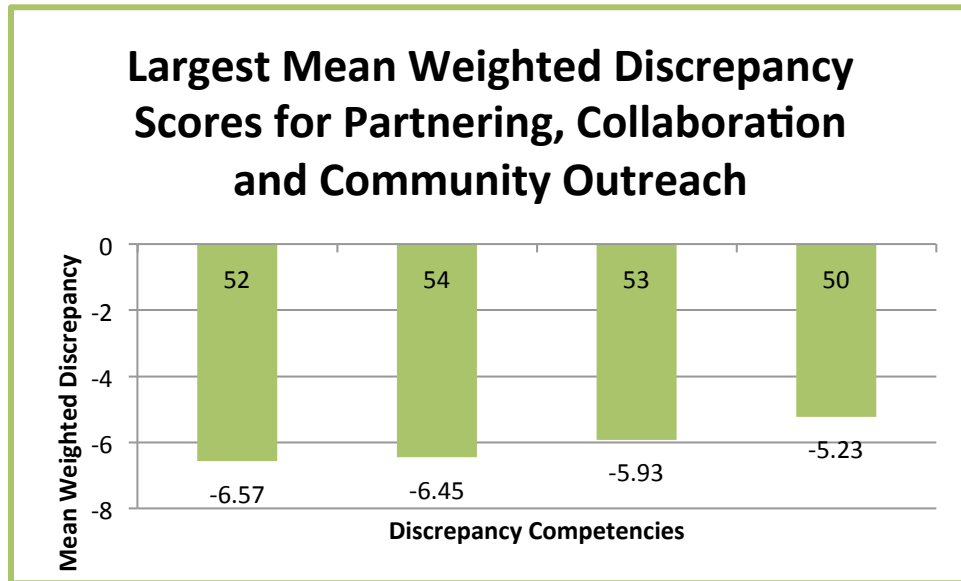


Figure F-4. The four competencies with the largest mean weighted discrepancy scores.

(52) Build a trusting relationship with partners by facilitating open dialogue.

(54) Collaborate with local formal and informal education institutions to share resources and expand learning opportunities.

(53) Demonstrate continued involvement with the surrounding community by engaging on a personal level with local groups and organizations.

(50) Seek opportunities to partner and collaborate when undertaking any interpretive or educational project or plan.

Mean Weighted Discrepancy Scores - Planning and Evaluation

Table F-5. Mean Weighted Discrepancy Scores - Planning and Evaluation

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
<i>Planning and Evaluation</i>	5.83	4.55	-7.02	11.09
(63) Evaluate effectiveness of interpretive products or services at all stages of development.	5.83	4.41	-9.06	11.55
(67) Identify training needs of staff, volunteers and partners based on results of evaluation.	5.73	4.41	-8.89	11.69
(62) Analyze costs and benefits as part of prioritizing programming and allocating resources.	5.45	4.12	-8.57	10.69
(66) Apply results of formal and informal evaluation to ensure programming meets desired outcomes.	5.87	4.58	-8.12	11.20

(65)	Foster an environment conducive for routine, informal, peer-driven evaluation.	5.74	4.61	-7.13	11.24
(59)	Collaborate with colleagues, subject matter experts, partners, potential audience members and other stakeholders during planning and development of all interpretive and educational products and services.	5.93	4.96	-6.07	10.31
(57)	Prioritize and align interpretative and education products and services with division, park and agency goals and objectives.	5.98	5.73	-1.30	10.94

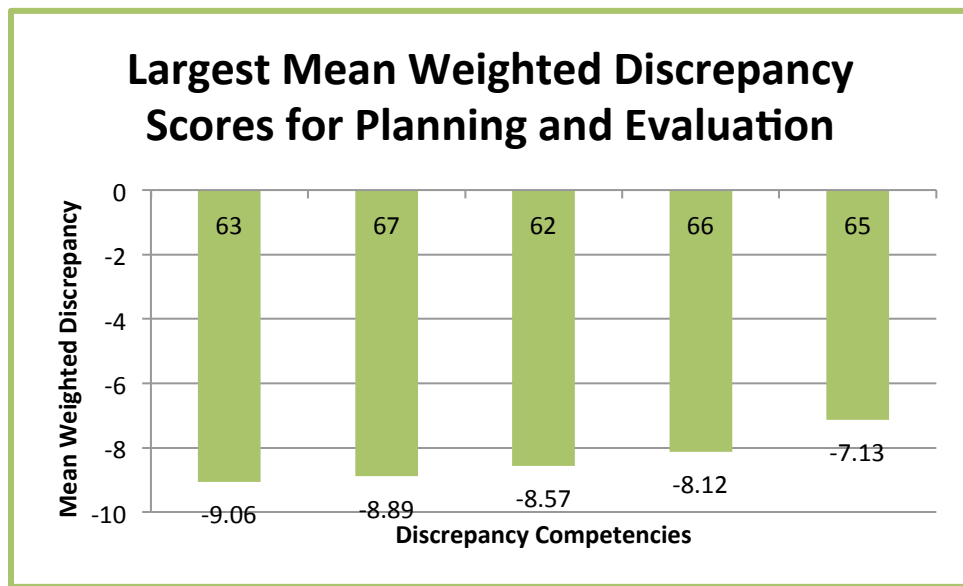


Figure F-5. The five competencies with the largest mean weighted discrepancy scores.

- (63) Evaluate effectiveness of interpretive products or services at all stages of development.
- (67) Identify training needs of staff, volunteers and partners based on results of evaluation.
- (62) Analyze costs and benefits as part of prioritizing programming and allocating resources.
- (66) Apply results of formal and informal evaluation to ensure programming meets desired outcomes.
- (65) Foster an environment conducive for routine, informal, peer-driven evaluation.

Mean Weighted Discrepancy Scores - Professional Development of Self and Others**Table F-6. Mean Weighted Discrepancy Scores - Professional Development of Self and Others**

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
Professional Development of Self and Others	6.07	4.87	-7.13	10.55
(68) Plan for self-development and continuously pursue professional growth opportunities.	6.19	4.65	-9.61	11.99
(69) Keep current on interpretive best practices, theories and changes in the field of interpretation.	6.09	4.67	-9.02	10.92
(70) Develop and experiment with new interpretive techniques.	5.86	4.64	-7.71	10.44
(76) Foster an environment of interpersonal trust, and open conversations where peers share insights and feedback.	6.23	5.03	-7.58	11.24
(78) Use self-assessment and evaluative feedback from others to gauge effectiveness of communication methods.	5.97	4.80	-7.25	10.21
(71) Share interpretive success with peers within workgroup and broader communities of practice.	5.80	4.69	-6.87	10.89
(77) Seek out and participate in peer collaboration and mentoring relationships.	5.82	4.67	-6.84	10.97
(79) Use feedback to improve personal performance.	6.28	5.27	-6.49	9.52
(81) Practice effective listening and communication skills to provide constructive feedback.	6.29	5.32	-6.42	10.15
(72) Identify and minimize the impact of own personal biases.	6.16	5.20	-6.02	9.20
(80) Identify and articulate elements of success when critiquing the work of peers.	6.07	5.16	-6.01	10.10
(82) Communicate positive, provisional and specific verbal and written feedback in peer mentoring and coaching relationships.	6.04	5.21	-5.71	10.99

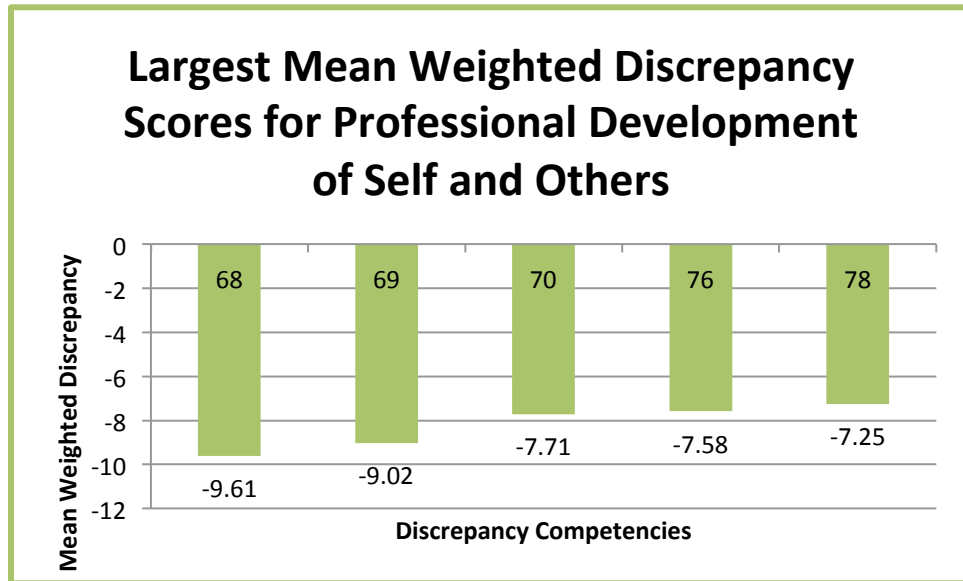


Figure F-6. The five competencies with the largest mean weighted discrepancy scores.

- (68) Plan for self-development and continuously pursue professional growth opportunities.
- (69) Keep current on interpretive best practices, theories and changes in the field of interpretation.
- (70) Develop and experiment with new interpretive techniques.
- (76) Foster an environment of interpersonal trust, and open conversations where peers share insights and feedback.
- (78) Use self-assessment and evaluative feedback from others to gauge effectiveness of communication methods.

Appendix G

Supervisor Only Competency Tables and Charts

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Perceptions of Importance - Partnering, Collaboration and Community Outreach Competencies Pertaining to Supervisors

Table G-1. Perceptions of Importance- Partnering, Collaboration and Community Outreach Competencies Pertaining to Supervisors

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
Partnering, Collaboration and Community Outreach								6.08	1.18
(49) Foster and maintain quality partnerships that share a vision for interpretation and education.	0.3	1.0	0.7	3.8	13.6	31.1	49.3	6.20	1.03
(55) Find and use alternative funding to offset costs.	1.4	2.1	1.8	4.2	10.9	27.4	52.3	6.12	1.28
(56) Regularly assess partnerships to ensure mutual effectiveness.	0.4	2.1	2.1	5.0	16.0	30.5	44.0	6.01	1.19
(51) Collaborate with a wide variety of stakeholders to craft interpretive goals that mutually benefit the park, agency, audience and broader community.	1.0	1.7	1.4	6.3	15.0	31.8	42.7	5.99	1.23

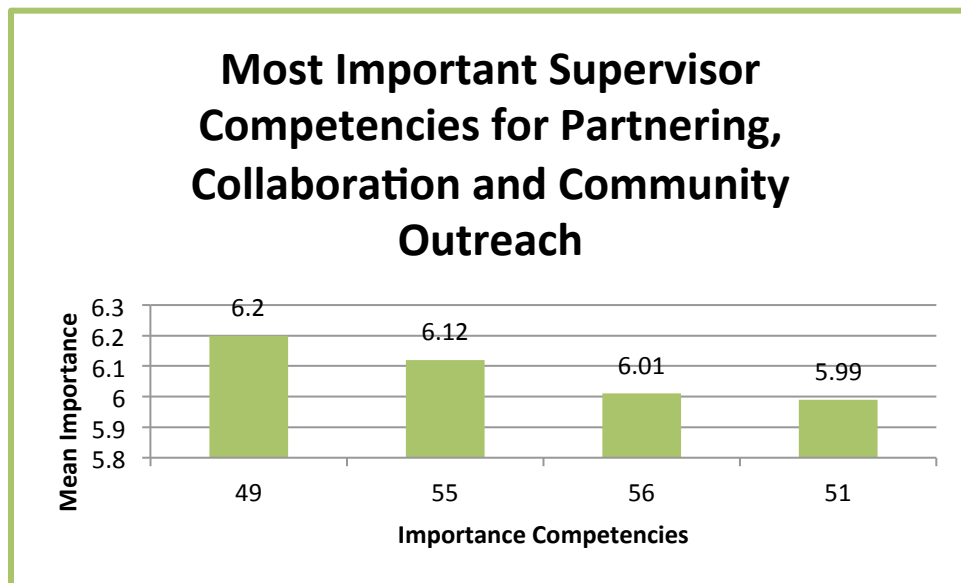


Figure G-1. The four competencies rated by supervisors as the most important to their positions.

(49) Foster and maintain quality partnerships that share a vision for interpretation and education.

(55) Find and use alternative funding to offset costs.

(56) Regularly assess partnerships to ensure mutual effectiveness.

(51) Collaborate with a wide variety of stakeholders to craft interpretive goals that mutually benefit the park, agency, audience and broader community.

**Perceptions of Preparedness - Partnering, Collaboration and Community Outreach
Competencies Pertaining to Supervisors**

**Table G-2. Perceptions of Preparedness - Partnering, Collaboration and Community Outreach
Competencies Pertaining to Supervisors**

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
Partnering, Collaboration and Community Outreach									4.56	1.68
(55) Find and use alternative funding to offset costs.	2.1	14.1	15.5	11.7	13.8	18.7	14.1	9.9	3.91	1.93
(56) Regularly assess partnerships to ensure mutual effectiveness.	3.5	4.6	10.6	14.1	18.7	21.8	15.8	10.9	4.39	1.67
(51) Collaborate with a wide variety of stakeholders to craft interpretive goals that mutually benefit the park, agency, audience and broader community.	2.1	3.5	7.0	10.9	16.5	19.0	25.4	15.5	4.82	1.65
(49) Foster and maintain quality partnerships that share a vision for interpretation and education.	1.1	2.1	3.9	6.7	18.0	21.5	29.2	17.6	5.13	1.46

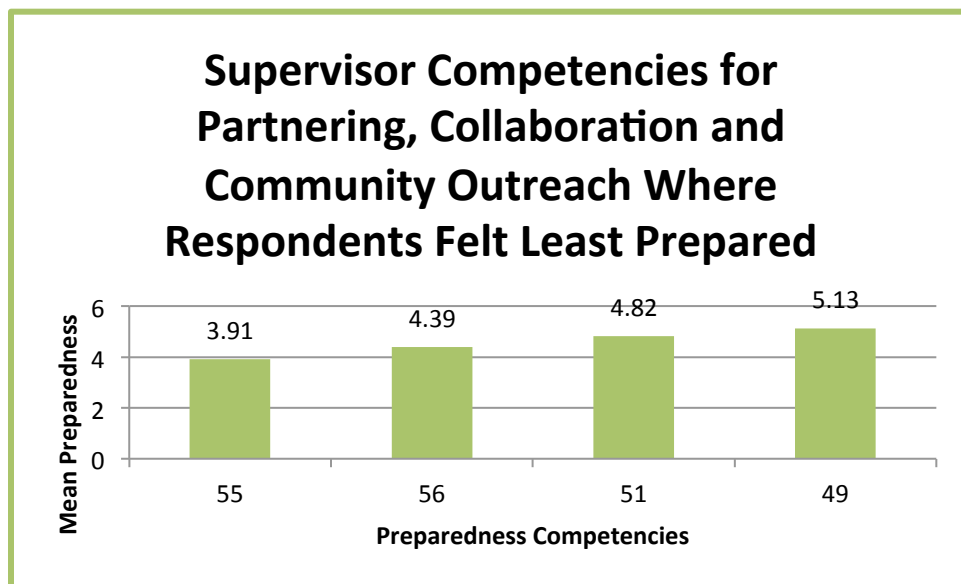


Figure G-2. The four competencies rated by supervisors where they felt least prepared.

(55) Find and use alternative funding to offset costs.

(56) Regularly assess partnerships to ensure mutual effectiveness.

(51) Collaborate with a wide variety of stakeholders to craft interpretive goals that mutually benefit the park, agency, audience and broader community.

(49) Foster and maintain quality partnerships that share a vision for interpretation and education.

Mean Weighted Discrepancy Scores - Partnering, Collaboration and Community Outreach Competencies Pertaining to Supervisors

Table G-3. Mean Weighted Discrepancy Scores - Partnering, Collaboration and Community Outreach Competencies Pertaining to Supervisors

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Scores	Standard Deviation
<i>Partnering, Collaboration and Community Outreach</i>	5.94	4.72	-9.54	10.76
(55) Find and use alternative funding to offset costs.	6.12	3.91	-13.94	12.63
(56) Regularly assess partnerships to ensure mutual effectiveness.	6.01	4.39	-10.10	10.42
(51) Collaborate with a wide variety of stakeholders to craft interpretive goals that mutually benefit the park, agency, audience and broader community.	5.99	4.82	-7.37	10.15
(49) Foster and maintain quality partnerships that share a vision for interpretation and education.	6.20	5.13	-6.75	9.84

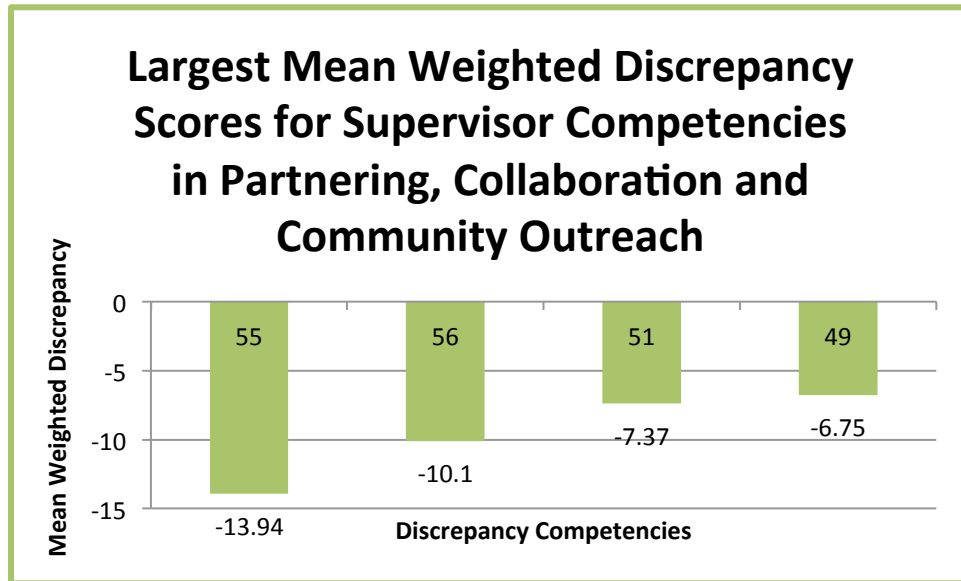


Figure G-3. The four supervisor competencies with the largest mean weighted discrepancy scores.

(55) Find and use alternative funding to offset costs.

(56) Regularly assess partnerships to ensure mutual effectiveness.

(51) Collaborate with a wide variety of stakeholders to craft interpretive goals that mutually benefit the park, agency, audience and broader community.

(49) Foster and maintain quality partnerships that share a vision for interpretation and education.

Perceptions of Importance - Planning and Evaluation Competencies Pertaining to Supervisors

Table G-4. Perceptions of Importance - Planning and Evaluation Competencies Pertaining to Supervisors

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
<i>Planning and Evaluation</i>								5.90	1.29
(58) Represent the interpretive division in broader park planning and management.	1.7	0.7	3.3	3.3	4.0	22.3	64.7	6.33	1.24
(60) Strategically plan and develop an array of program and media services to allow audience experiences to complement or build upon one another.	1.0	0.7	0.7	7.3	13.7	33.3	43.3	6.05	1.13

(61)	Develop, implement and evaluate effectiveness of marketing strategies for interpretation.	2.0	2.7	3.3	6.6	22.3	28.2	34.9	5.69	1.40
(64)	Partner with qualified specialists to evaluate interpretation.	1.0	3.7	5.3	8.0	22.3	32.7	27.0	5.53	1.38

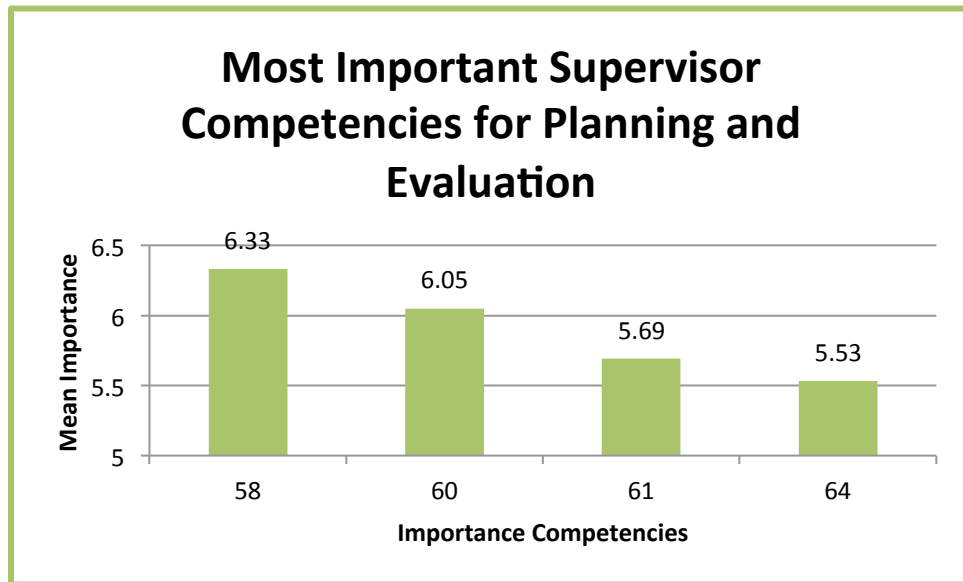


Figure G-4. The four competencies rated by supervisors as the most important to their positions.

(58) Represent the interpretive division in broader park planning and management.

(60) Strategically plan and develop an array of program and media services to allow audience experiences to complement or build upon one another.

(61) Develop, implement and evaluate effectiveness of marketing strategies for interpretation.

(64) Partner with qualified specialists to evaluate interpretation.

Perceptions of Personal Level of Preparedness - Planning and Evaluation Competencies Pertaining to Supervisors

Table G-5. Perceptions of Preparedness - Planning and Evaluation Competencies Pertaining to Supervisors

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
Planning and Evaluation									4.30	1.70
(61) Develop, implement and evaluate effectiveness of marketing strategies for interpretation.	3.7	12.1	16.4	20.8	17.1	16.1	8.4	5.4	3.57	1.70
(64) Partner with qualified specialists to evaluate interpretation.	1.3	12.1	14.1	15.8	17.2	19.2	12.1	8.1	3.87	1.81
(60) Strategically plan and develop an array of program and media services to allow audience experiences to complement or build upon one another.	2.3	5.0	6.7	13.4	19.1	21.5	19.5	12.4	4.57	1.65
(58) Represent the interpretive division in broader park planning and management.	2.0	3.0	5.4	7.0	14.0	18.1	26.4	24.1	5.19	1.63

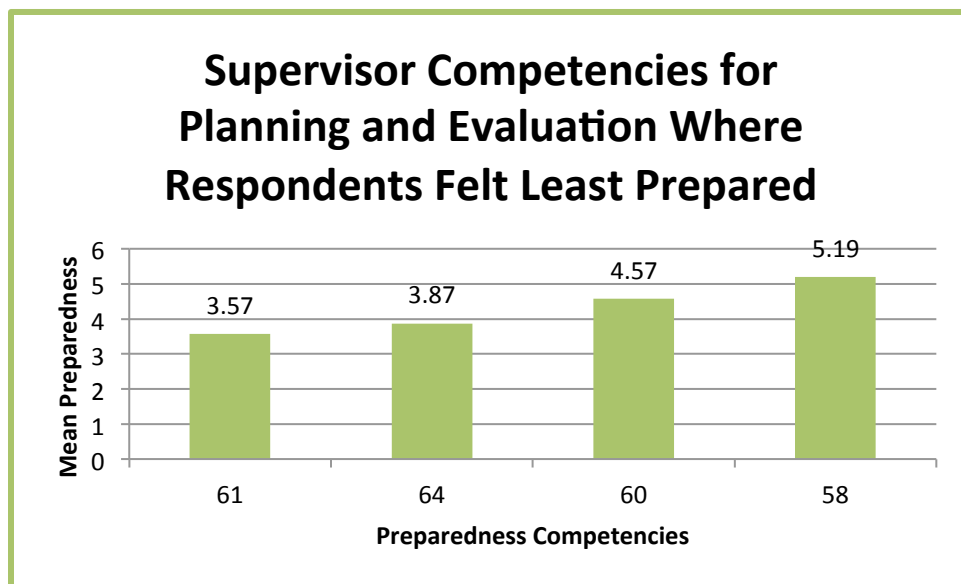


Figure G-5. The four competencies rated by supervisors where they felt least prepared.

(61) Develop, implement and evaluate effectiveness of marketing strategies for interpretation.

(64) Partner with qualified specialists to evaluate interpretation.

(60) Strategically plan and develop an array of program and media services to allow audience experiences to complement or build upon one another.

(58) Represent the interpretive division in broader park planning and management.

Mean Weighted Discrepancy Scores - Planning and Evaluation Competencies Pertaining to Supervisors

Table G-6. Mean Weighted Discrepancy Scores - Planning and Evaluation Competencies Pertaining to Supervisors

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
<i>Planning and Evaluation</i>	5.83	4.55	-9.77	10.63
(61) Develop, implement and evaluate effectiveness of marketing strategies for interpretation.	5.69	3.57	-12.79	10.46
(64) Partner with qualified specialists to evaluate interpretation.	5.53	3.87	-9.46	10.88
(60) Strategically plan and develop an array of program and media services to allow audience experiences to complement or build upon one another.	6.05	4.57	-9.25	10.14
(58) Represent the interpretive division in broader park planning and management.	6.33	5.19	-7.59	11.04

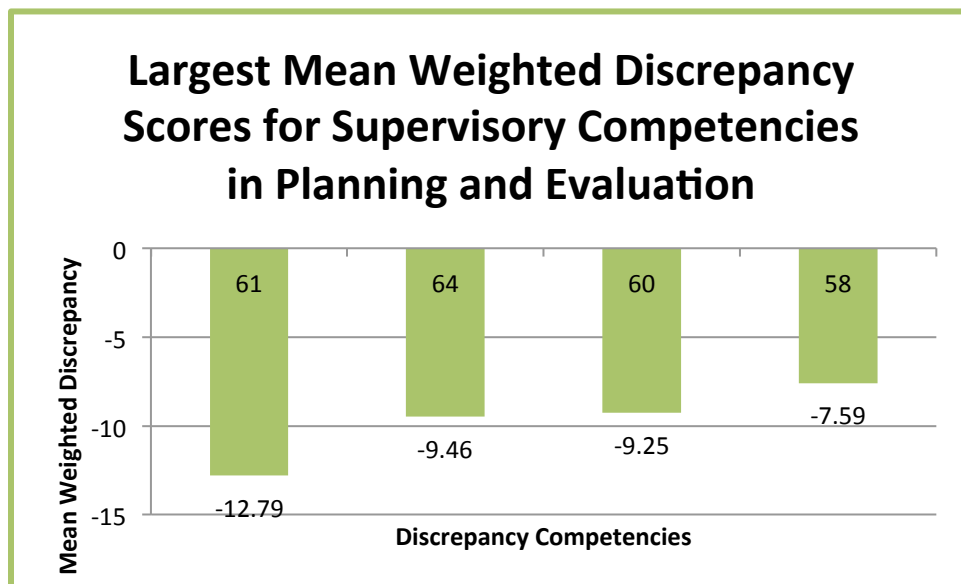


Figure G-6. The four supervisor competencies with the largest mean weighted discrepancy scores.

(61) Develop, implement and evaluate effectiveness of marketing strategies for interpretation.

(64) Partner with qualified specialists to evaluate interpretation.

(60) Strategically plan and develop an array of program and media services to allow audience experiences to complement or build upon one another.

(58) Represent the interpretive division in broader park planning and management.

Perceptions of Importance - Professional Development of Self and Others Competencies Pertaining to Supervisors.

Table G-7. Perceptions of Importance - Professional Development of Self and Others Competencies Pertaining to Supervisors

Interpretation & Education Importance	1	2	3	4	5	6	7	Mean (7=Extremely Important, 1=Unimportant)	Standard Deviation
Professional Development of Self and Others								6.08	1.12
(74) Provide training based on employee needs and park goals.	0.3	0.0	1.7	2.3	8.3	29.8	57.6	6.38	0.92
(75) Provide effective interpretive training by applying knowledge of both training methods and interpretive theory.	1.7	0.0	1.0	4.6	9.2	30.7	52.8	6.23	1.12
(73) Collaborate with local and national trainers to identify employee training needs.	0.7	2.3	3.6	12.8	19.1	30.3	31.3	5.63	1.32

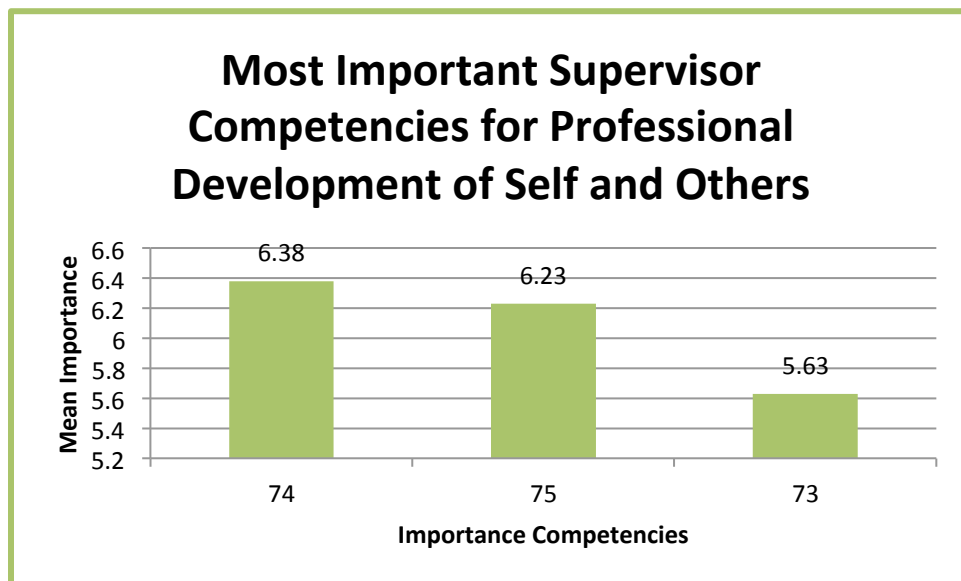


Figure G-7. The three competencies rated by supervisors as the most important to their positions.

(74) Provide training based on employee needs and park goals.

(75) Provide effective interpretive training by applying knowledge of both training methods and interpretive theory.

(73) Collaborate with local and national trainers to identify employee training needs.

Perceptions of Personal Level of Preparedness - Professional Development of Self and Others Competencies Pertaining to Supervisors

Table G-8. Perceptions of Preparedness - Professional Development of Self and Others Competencies Pertaining to Supervisors

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
Professional Development of Self and Others									4.59	1.69
(73) Collaborate with local and national trainers to identify employee training needs.	2.0	9.6	13.2	15.5	17.5	18.8	14.9	8.6	4.04	1.78
(74) Provide training based on employee needs and park goals.	2.6	3.6	8.9	11.6	13.2	20.2	24.8	14.9	4.76	1.69
(75) Provide effective interpretive training by applying knowledge of both training methods and interpretive theory.	3.0	4.0	3.0	12.7	11.3	24.3	24.3	17.3	4.97	1.60

Supervisor Competencies for Professional Development of Self and Others Where Respondents Felt Least Prepared

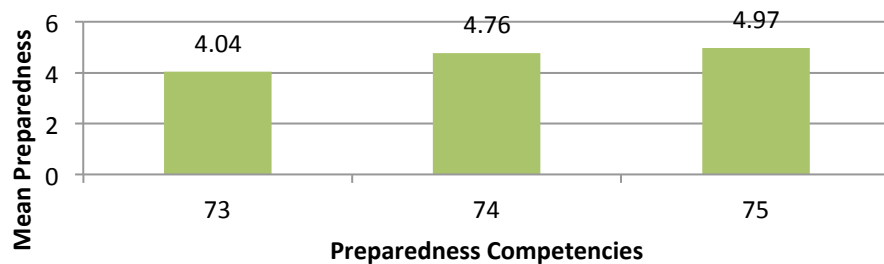


Figure G-8. The three competencies rated by supervisors where they felt least prepared.

- (73) Collaborate with local and national trainers to identify employee training needs.
- (74) Provide training based on employee needs and park goals.
- (75) Provide effective interpretive training by applying knowledge of both training methods and interpretive theory.

***Mean Weighted Discrepancy Scores - Professional Development of Self and Others
Competencies Pertaining to Supervisors***

**Table G-9. Mean Weighted Discrepancy Scores - Professional Development of Self and Others
Competencies Pertaining to Supervisors**

Competencies	Mean Importance	Mean Preparation	Mean Weighted Discrepancy Score	Standard Deviation
<i>Professional Development of Self and Others</i>	6.07	4.87	-9.38	10.20
(74) Provide training based on employee needs and park goals.	6.38	4.76	-10.55	10.66
(73) Collaborate with local and national trainers to identify employee training needs.	5.63	4.04	-9.19	9.96
(75) Provide effective interpretive training by applying knowledge of both training methods and interpretive theory.	6.23	4.97	-8.39	9.99

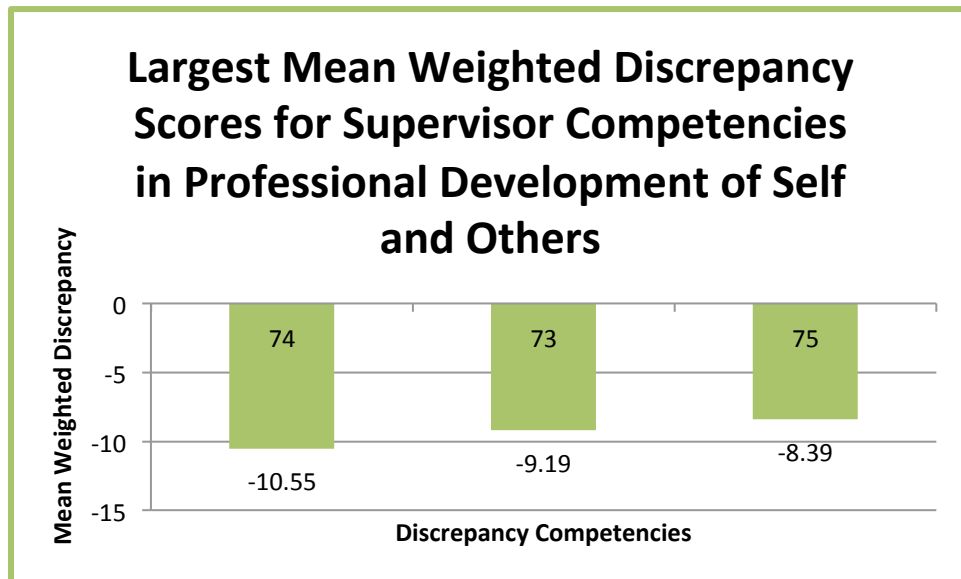


Figure G-9. The three supervisor competencies with the largest mean weighted discrepancy scores.

- (74) Provide training based on employee needs and park goals.
- (73) Collaborate with local and national trainers to identify employee training needs.
- (75) Provide effective interpretive training by applying knowledge of both training methods and interpretive theory.

Appendix H

I&E Tasks and Techniques Tables and Charts

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Perceptions of Frequency of Interpretation and Education Tasks

In Table H-1, the distribution of responses is shown regarding how often respondents perform specific Interpretation and Education tasks.

Table H-1. Perceptions of Frequency of Participation in Work Related Tasks among Interpretation & Education Employees

Interpretation & Education Preparedness	Never %	Rarely %	Sometimes %	Often %	Very Often %	Mean (5=Very Often, 1=Never)	Standard Deviation
Tasks						3.18	1.31
(83) Plan/conduct demonstrations	16.3	24.5	24.6	15.1	19.5	2.97	1.35
(84) Plan/conduct living history	44.7	22.4	14.7	7.9	10.3	2.17	1.35
(85) Plan/conduct education programs	13.0	20.0	24.0	14.5	28.4	3.25	1.39
(86) Plan/conduct front-line programs (any type)	6.2	13.4	18.5	18.8	43.1	3.79	1.29
(87) Engage in informal interpretive contacts	2.2	7.7	18.7	21.7	49.7	4.09	1.09
(88) Provide information/orientation services	1.8	8.4	17.0	19.1	53.7	4.14	1.09
(89) Plan/conduct outreach programs	13.9	22.3	30.3	18.7	14.8	2.98	1.25
(90) Plan/conduct facilitated dialogues	27.9	27.5	25.1	12.3	7.2	2.43	1.22
(91) Lead collaborative teams	14.7	19.6	24.4	21.4	19.9	3.12	1.33
(92) Manage volunteers	14.9	14.4	27.8	18.4	24.5	3.23	1.36
(93) Coach others	8.7	11.1	28.6	25.2	26.5	3.50	1.23
(94) Train others	5.6	9.2	28.9	28.9	27.4	3.63	1.14
(95) Supervise others	20.4	12.8	18.6	12.7	35.5	3.30	1.55
(96) Develop media products	15.0	18.6	26.3	19.1	21.0	3.12	1.34
(97) Manage websites	43.4	15.5	13.4	11.4	16.3	2.42	1.52
(98) Manage social media	42.5	13.9	12.9	13.5	17.1	2.49	1.55
(99) Participate in interpretive planning	8.6	13.7	27.1	26.3	24.3	3.44	1.23
(100) Assist in interpretive research	12.8	17.8	27.8	19.8	21.8	3.20	1.31

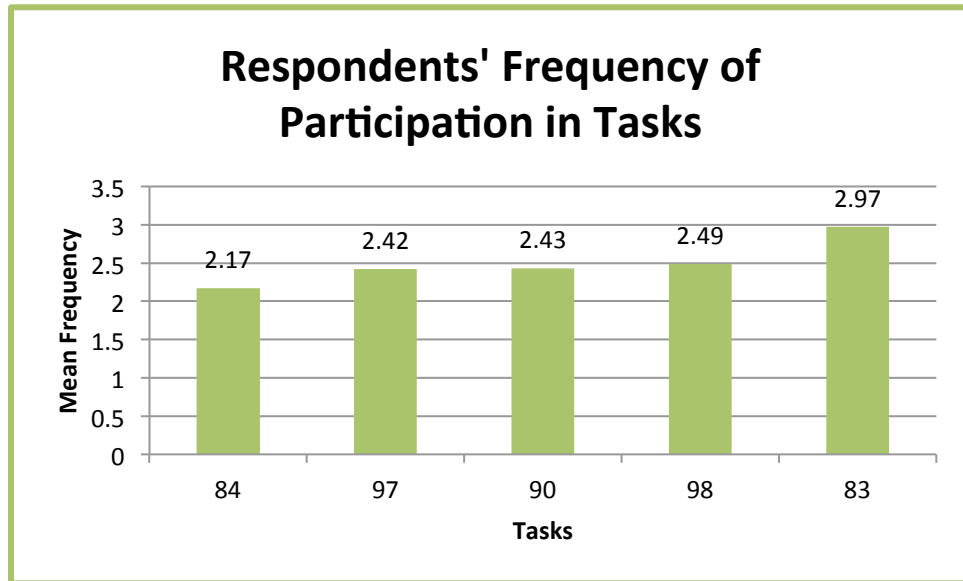


Figure H-1. The five lowest frequencies of participation in tasks by respondents.

(84) Plan/conduct living history

(97) Manage websites

(90) Plan/conduct facilitated dialogues

(98) Manage social media

(83) Plan/conduct demonstrations

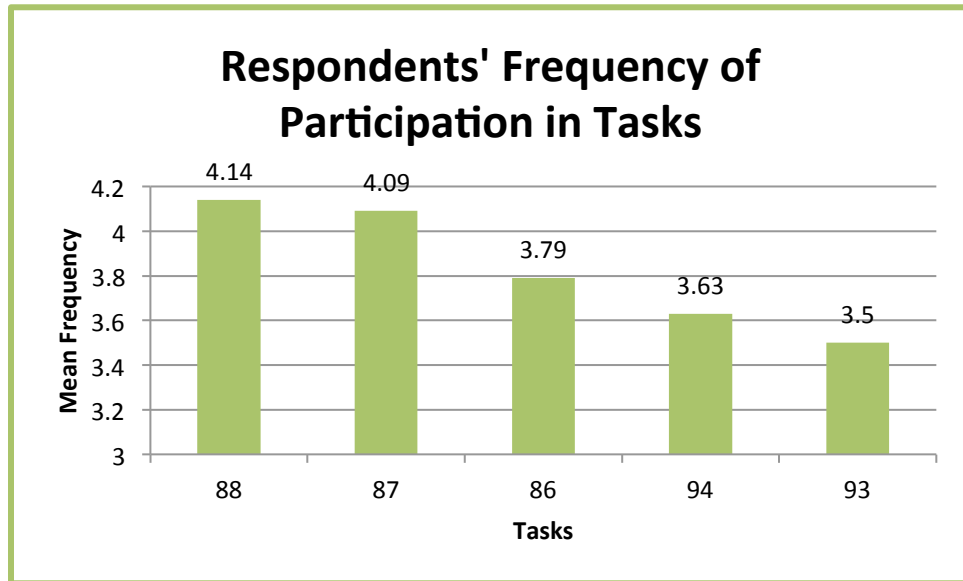


Figure H-2. The five highest frequencies of participation in tasks by respondents.

(88) Provide information/orientation services

(87) Engage in informal interpretive contacts

(86) Plan/conduct front-line programs (any type)

(94) Train others

(93) Coach others

Supervisor Perceptions of Frequency of Interpretation and Education Tasks

In Table H-2, the distribution of responses is shown regarding how often supervisors perform specific Interpretation and Education tasks.

Table H-2. Supervisor Perceptions of Frequency of Participation in Work Related Tasks among Interpretation & Education Employees

Interpretation & Education Preparedness	Never %	Rarely %	Sometimes %	Often %	Very Often %	Mean (5=Very Often, 1=Never)	Standard Deviation
Tasks						3.40	1.15
(83) Plan/conduct demonstrations	16.7	35.0	23.5	11.4	13.4	2.70	1.26
(84) Plan/conduct living history	47.5	27.7	12.9	6.3	5.6	1.95	1.17
(85) Plan/conduct education programs	12.8	29.5	23.3	12.8	21.6	3.01	1.34
(86) Plan/conduct front-line programs (any type)	4.9	25.0	26.6	18.4	25.0	3.34	1.24
(87) Engage in informal interpretive contacts	1.3	11.8	28.6	27.3	30.9	3.75	1.06
(88) Provide information/orientation services	1.6	13.8	27.5	21.6	35.4	3.75	1.13
(89) Plan/conduct outreach programs	6.2	21.6	32.7	22.9	16.7	3.22	1.15
(90) Plan/conduct facilitated dialogues	23.9	28.1	27.5	12.4	8.2	2.53	1.21
(91) Lead collaborative teams	2.3	11.8	21.0	29.5	35.4	3.84	1.11
(92) Manage volunteers	4.6	11.5	25.9	26.2	31.8	3.69	1.17
(93) Coach others	1.0	3.3	13.4	35.3	47.1	4.24	0.88
(94) Train others	1.0	2.3	19.0	31.5	46.2	4.20	0.89
(95) Supervise others	1.0	0.3	4.6	13.4	80.7	4.73	0.66
(96) Develop media products	7.2	15.1	26.9	26.2	24.6	3.46	1.22
(97) Manage websites	26.9	18.7	16.7	18.4	19.3	2.85	1.48
(98) Manage social media	28.5	15.4	17.0	19.3	19.7	2.86	1.51
(99) Participate in interpretive planning	2.0	5.9	20.4	31.6	40.1	4.02	1.01
(100) Assist in interpretive research	10.5	21.9	33.7	16.3	17.6	3.09	1.23

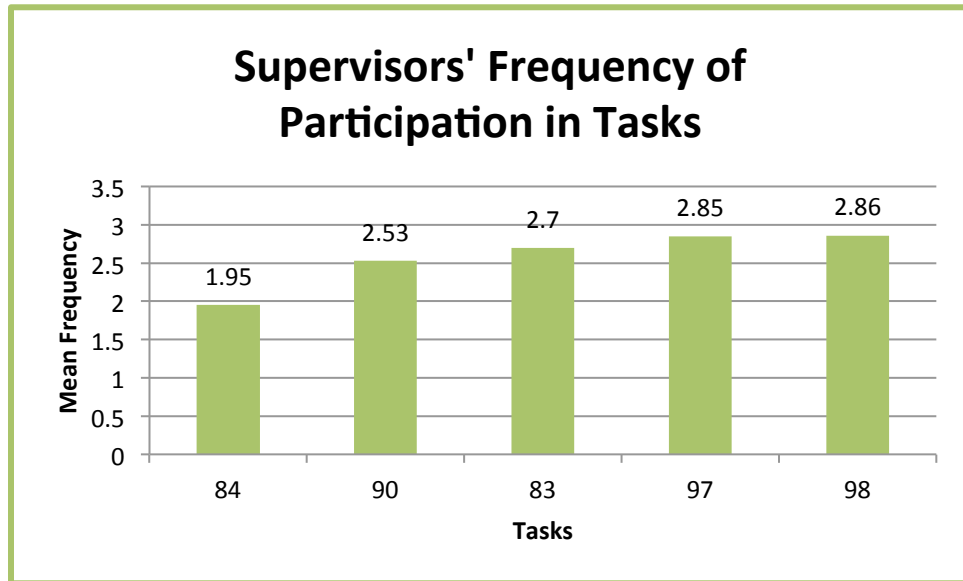


Figure H-3. The five lowest frequencies of participation in tasks by supervisors.

(84) Plan/conduct living history

(90) Plan/conduct facilitated dialogues

(83) Plan/conduct demonstrations

(97) Manage websites

(98) Manage social media

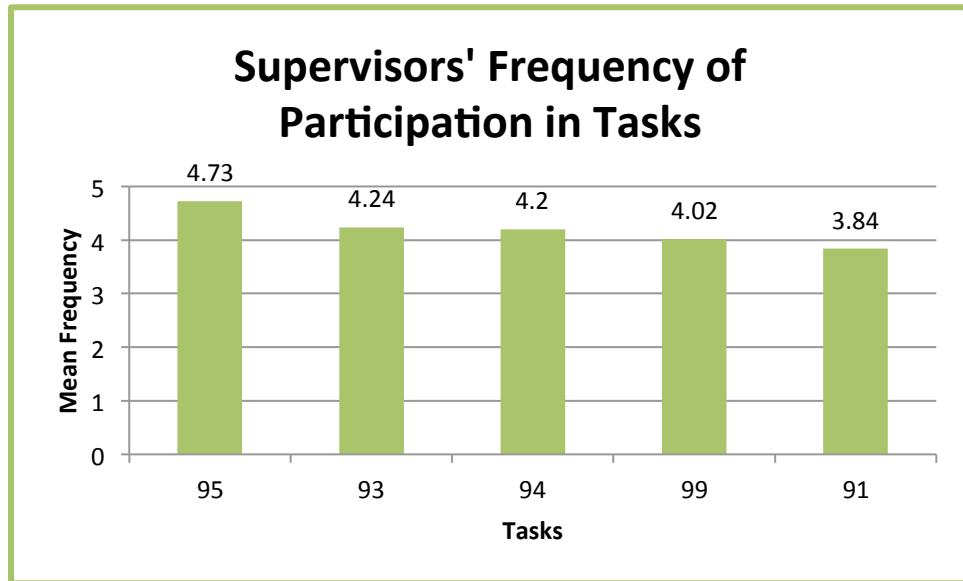


Figure H-4. The five highest frequencies of participation in tasks by supervisors.

(95) Supervise others

(93) Coach others

(94) Train others

(99) Participate in interpretive planning

(91) Lead collaborative teams

Non-Supervisor Perceptions of Frequency of Interpretation and Education Tasks

In Table H-3, the distribution of responses is shown regarding how often non-supervisors perform specific Interpretation and Education tasks.

Table H-3. Non-Supervisor Perceptions of Frequency of Participation in Work Related Tasks among Interpretation & Education Employees

Interpretation & Education Preparedness	Never %	Rarely %	Sometimes %	Often %	Very Often %	Mean (5=Very Often, 1=Never)	Standard Deviation
Tasks						3.11	1.30
(83) Plan/conduct demonstrations	16.6	16.6	26.8	16.8	23.1	3.13	1.43
(84) Plan/conduct living history	44.7	18.6	15.5	8.0	13.3	2.27	1.40
(85) Plan/conduct education programs	12.8	14.0	24.6	15.7	32.9	3.42	1.24
(86) Plan/conduct front-line programs (any type)	6.7	6.9	12.8	19.8	53.8	4.07	1.08
(87) Engage in informal interpretive contacts	2.8	5.9	13.0	17.4	60.9	4.28	1.00
(88) Provide information/orientation services	1.8	5.3	11.0	17.6	64.3	4.37	1.28
(89) Plan/conduct outreach programs	17.7	24.4	27.8	16.9	13.2	2.84	1.21
(90) Plan/conduct facilitated dialogues	30.2	27.1	24.1	12.0	6.5	2.38	1.29
(91) Lead collaborative teams	21.0	24.1	26.9	16.1	11.8	2.74	1.39
(92) Manage volunteers	20.6	16.1	28.5	14.7	20.2	2.98	1.23
(93) Coach others	13.2	16.0	35.3	20.1	15.4	3.09	1.15
(94) Train others	7.6	14.1	32.7	28.0	17.8	3.34	1.29
(95) Supervise others	32.0	19.8	26.7	12.8	8.8	2.47	1.40
(96) Develop media products	19.8	20.4	24.8	14.9	20.2	2.95	1.52
(97) Manage websites	51.5	13.0	12.2	7.9	15.4	2.23	1.55
(98) Manage social media	49.4	12.4	11.4	10.4	16.5	3.09	1.23
(99) Participate in interpretive planning	12.4	19.3	30.9	22.2	15.2	3.24	1.36
(100) Assist in interpretive research	14.7	15.5	24.1	22.7	22.9	3.08	1.31

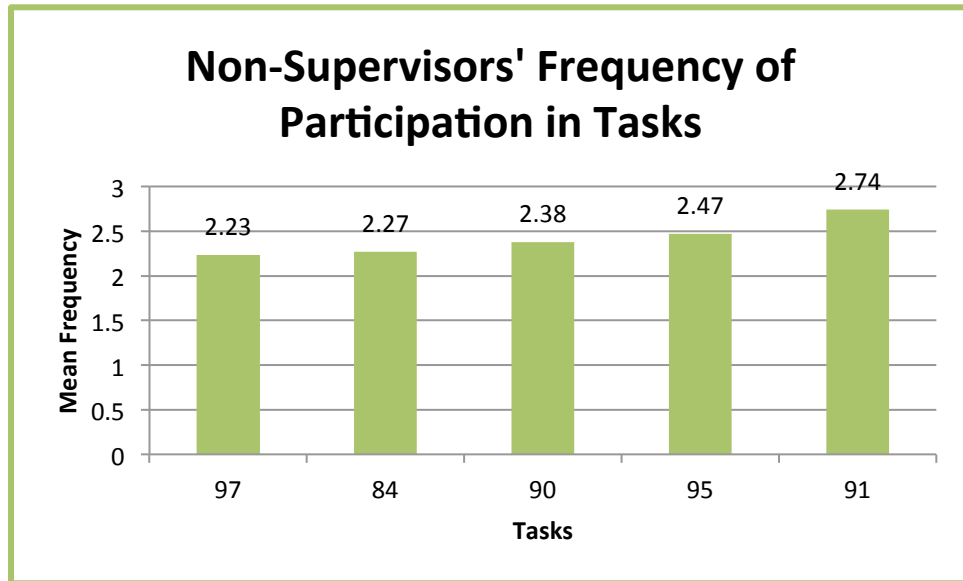


Figure H-5. The five lowest frequencies of participation in tasks by non-supervisors.

(97) Manage websites

(84) Plan/conduct living history

(90) Plan/conduct facilitated dialogues

(95) Supervise others

(91) Lead collaborative teams

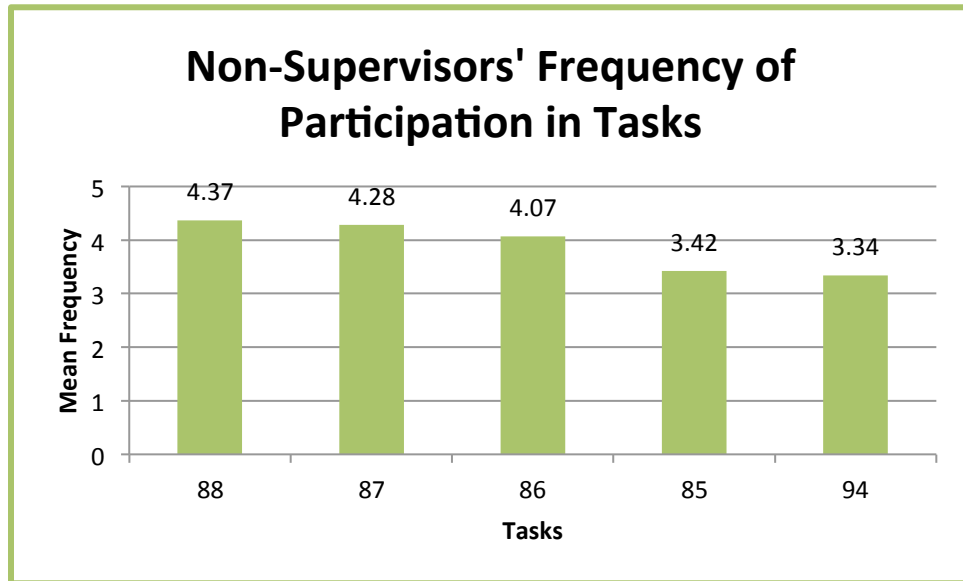


Figure H-6. The five highest frequencies of participation in tasks by non-supervisors.

- (88) Provide information/orientation services
- (87) Engage in informal interpretive contacts
- (86) Plan/conduct front-line programs (any type)
- (85) Plan/conduct education programs
- (94) Train others

Perceptions of Personal Level of Preparedness Assigned to Interpretation and Education Engagement and Co-Creation Techniques

In Table H-4, the distribution of responses is shown for respondents' perceptions of how well prepared they are to perform engagement and co-creation techniques, along with the means of each.

Table H-4. Perceptions of Preparedness in Engagement/Co-Creation Techniques among Interpretation & Education Employees

Interpretation & Education Preparedness	N/A	1	2	3	4	5	6	7	Mean (7=Extremely Well Prepared, 1=Unprepared)	Standard Deviation
Engagement/Co-Creation Techniques									3.82	1.92
(101) Facilitated dialogue	6.2	12.4	12.1	13.6	15.5	17.5	14.7	7.9	3.95	1.85
(102) Multi-sensory engagement	7.9	10.1	10.2	10.4	13.6	18.3	16.9	12.5	4.31	1.90
(103) Guided imagery	10.1	19.7	10.0	10.6	12.7	16.2	11.9	8.8	3.74	2.02
(104) Resource immersion techniques (directed experiences)	8.0	10.9	9.4	10.3	11.6	14.7	20.2	15.0	4.42	1.98
(105) Strategic questioning (arc of questions or essential questions)	5.1	10.1	9.2	10.3	14.1	18.3	19.9	13.0	4.41	1.89
(106) Co-developed themes	8.7	14.4	10.5	11.5	14.9	15.6	15.3	9.1	3.98	1.94
(107) Citizen science/service learning	9.9	13.6	12.1	15.2	12.8	14.6	13.1	8.9	3.86	1.92
(108) Guided discovery	8.6	15.3	10.0	10.8	13.1	16.1	14.6	11.6	4.04	2.01
(109) Audience-generated art, photos, music, drama, stories	13.3	21.5	14.3	13.5	13.8	10.0	8.0	5.6	3.26	1.89
(110) Audience-curated exhibits	17.7	31.2	16.0	11.1	9.8	6.7	3.7	3.9	2.65	1.79
(111) Role playing	13.5	17.1	16.5	13.4	11.3	12.1	9.9	6.2	3.45	1.91

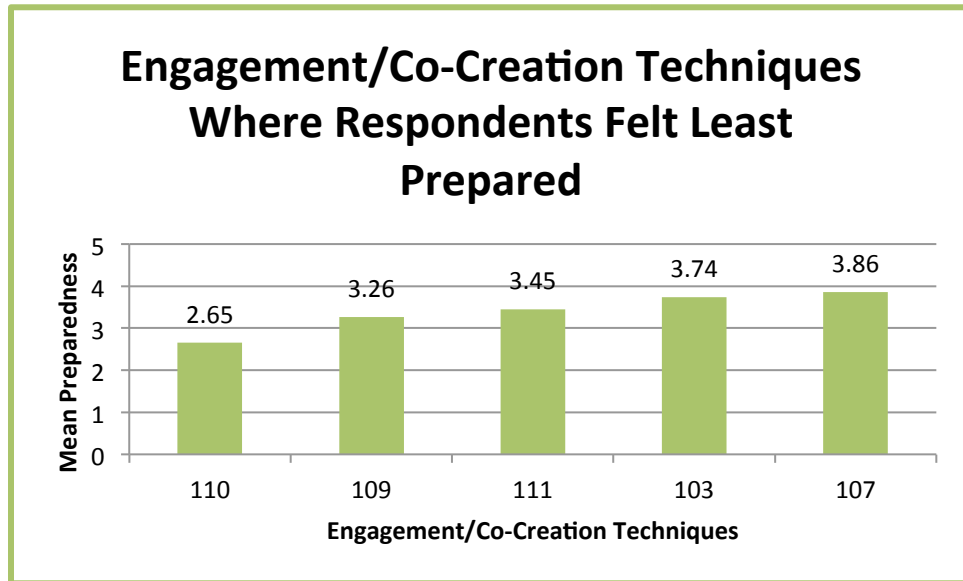


Figure H-7. The five engagement/co-creation techniques rated by respondents where they felt least prepared.

(110) Audience-curated exhibits

(109) Audience-generated art, photos, music, drama, stories

(111) Role playing

(103) Guided imagery

(107) Citizen science/service learning