Analyzing Visitor Evaluations at the Nantucket Historical Association

Final Report

An Interactive Qualifying Project

Submitted to the Faculty of

WORCESTER POLYTECHNIC INSTITUTE

In partial fulfillment of the requirements for the

Degree of Bachelor Science

By

Jacqueline Foti

Jonathan Rapp

Date:

15 December 2011

Report Submitted to:

Chris Mason & Claire White

Nantucket Historical Society

Professor Dominic Golding

Worcester Polytechnic Institute

Abstract

The goal of this project was to help the Nantucket Historical Association assess and enhance the way the museum conducts its visitor evaluation. The team coded and analyzed visitor survey data collected during summer 2011. These data as well as feedback from NHA staff members were used to recommend improvements in the NHA's survey instruments and protocols. We hope that these improvements will allow the NHA to enhance its visitor evaluation efforts and thereby improve visitor experiences in the future.

Acknowledgements

We would like to thank our liaisons, Chris Mason and Claire White, for all of the help and guidance they gave us over the course of the term. Our countless questions never went unanswered, and we are thankful for all the time Chris and Claire devoted to us. We are grateful both Chris and Claire made sure to provide us with valuable interpreter insight as well as give us a first-hand experience of the activities in the A-Z gallery and the Discovery Room. We would also like to thank Kim McCray for all of her help in preparing us for our interactions with the Nantucket Historical Society. All of the resources she provided us and kind emails got us really excited to work with the NHA team. We would like to extend our thanks to Julie Kever for all of her support and helping us to get anything and everything printed. She was always there for us and made sure we always knew where to get the best soup. The team would also like to thank Peter Morrison for the time he took out of his schedule to attend our meetings and provide his insight to our project. We especially would like to thank the entire NHA staff, who made our weekly staff meetings interesting and full of baked goods. We also appreciated that they always stopped in the Vault to say hello to us during the day. The team would also like to thank our families and friends for supporting us while we were away on the island.

Lastly, the team would like to thank Dr. Dominic Golding for all of his help over the last semester. Between revising our report drafts and giving us a shove in the right direction, his guidance has been invaluable to our team and project. We could not have produced this project without him.

Executive Summary

Nantucket has a long history from its whaling days to the present. The Nantucket Historical Association (NHA) preserves, interprets, and fosters an appreciation of that history. The NHA offers a wide variety of programs, tours and exhibits to engage visitors and residents. It is best practice for museums to survey their visitors to gain an understanding of the larger picture: are the exhibits interesting and engaging? Are facilities clean and up to visitor expectations? How does the museum portray itself from the beginning to the end of the visitor experience? Bill Tramposch, Director of the NHA, hopes to show his staff that evaluations are not as complex as they appear to be and get everyone involved with future evaluations. In order to do that, the NHA has asked our team to analyze and evaluate their visitor experience evaluation protocols and make recommendations on how to conduct future evaluations in the museum.

Evaluation has become increasingly important in museums. This is due to a desire to learn more about visitor needs and interests in order to design better exhibits, programs, and activities. Evaluations also produce data that can be used to improve the effectiveness of marketing efforts and enhance a museum's ability to obtain funding through grants. Increasingly, funding organizations require formal evaluation as a stipulation for an award. Today, there are three major sectors in the world of museum evaluation: general museum, exhibit, and educational evaluation. Each of these can help to provide a quality visitor experience and further the goals of the museum. The team focused on educational and exhibit evaluation in this project.

The overarching goal of this project was to help the Nantucket Historical Association assess and enhance the way the museum conducts its visitor evaluation. In order to accomplish this goal, the project team identified several project objectives and various associated tasks. After clarifying the scope of the visitor studies conducted by the NHA, the team coded and analyzed visitor survey data collected during summer 2011. These data, as well as feedback from NHA staff members, were used to recommend improvements in the NHA's survey instruments and protocols.

The NHA has conducted relatively few visitor evaluations in the past. For this reason, the instruments and protocols they use need to be developed and the staff needs to be

trained both in the importance of evaluation and the mechanisms of evaluation. Like other museums, the NHA is interested in conducting more visitor evaluations in order to improve exhibits and programs (i.e., the visitor experience) and enhance its marketing and fund-raising efforts. As an institution, the NHA needs to create a sense that evaluation is valued by the organization so that staff will see it as an important part of their jobs, not a distraction from other tasks.

Based on the data and our observations we were able to draw a variety of conclusions:

- From the data it appears that the museum is doing a good job meeting visitor's needs and expectations. Ninety three percent of the respondents rated their overall experience as 6 or above on an 8-point scale (where 8 equaled 'extremely satisfied') to yield an average score of 7.34 overall.

- There is an inevitable tension between the needs of different staff and how they can be met through visitor evaluation (e.g., curators/interpreters vs. marketing). This was seen during interviews with each department about what they wanted to include in the surveys and learn from evaluations. Each visitor survey instrument will need to be designed to balance these different needs, and we have developed some model instruments that try to do this. It may be necessary in the future to develop other instruments with varying emphases on curatorial and programmatic needs versus marketing. In designing these surveys, staff should avoid the temptation to include more and more questions, since the survey instruments will 'balloon' and the response rates and quality of information will decline.

- Staff need more training in the development and delivery of surveys and the collection of additional data (e.g., zip codes, etc. at the point of sale). This ranges from simple things such as writing legibly on surveys to more complex things like survey administration and data coding and analysis. Training more staff on appropriate surveying techniques will have a variety of benefits. It will improve the quality and quantity of data that can be collected and reinforce the sense among staff that visitor evaluation is important. Greater involvement of staff in

evaluation may also encourage different kinds of interactions between staff and visitors and thus encourage a more reflective assessment of what the museum does and how it does it.

- The NHA's survey instruments and protocols need improving. The team put a lot of focus into working with staff to improve these evaluation tools. We are confident that the NHA now has a good framework to move forward with and instruments that will obtain useful, higher quality data.

- The more that data entry and analysis can be streamlined, the better able the staff will be able to administer and analyze evaluation surveys. The team learned this from coding the data from the past evaluations, which were in multiple formats and difficult to compare. The team created a coding sheet for them to follow that will work with all future evaluations and keep the data organized and in similar states for easy analysis.

- Technology from the point of sale to hand-held devices offers major opportunities for improved evaluation and ongoing collection of data necessary for marketing. The NHA staff appears eager to weave technology into their surveying and data collection instruments. Implementing improved software at the point of sale would allow the NHA to gather membership, zip code, and email data more easily and thus improve the quantity, quality, and consistency of the data collected. Also, implementing handhelds for surveying would allow the NHA to save time coding and analyzing their data sets and potentially collect more information on the floor.

- Failure to collect basic information such as zip codes and basic demographic data is a severe limitation that needs to be addressed for future marketing and funding opportunities. These were seen through small data sets and uncompleted observational demographic questions on surveys. Luckily, these problems can be fixed if proper training is given to all staff and more effort is put into data collection.

Based on the results of the coding and analysis conducted by the project team the following recommendations have been presented to the staff at the NHA:

Overall Recommendations:

- Continue to conduct evaluations in the museum since so much useful information can be obtained from them that will allow the NHA to enhance its programs, marketing, and ability to garner funding.
- Staff should be trained on all aspects of the museum's evaluation process in order to improve the quality and quantity of the data that can be collected and reinforce the sense among staff that visitor evaluation is important.
- Create tailored survey instruments that always try to balance marketing needs with curatorial and programmatic needs, though inevitably will want some instruments with a heavier emphasis on one or the other depending on the point of the particular survey and needs of the museum at the time.
- Do not lose focus on the strengths of the museum such as the staff's alignment with the four tenets of the NHA: programs, collections and properties, audiences and access, and organizational effectiveness.

Technology Recommendations:

- Use online survey generators for survey delivery since they can cut down the time it takes for coding and analysis with the use of handhelds or online surveying.
- Utilize handheld devices such as iPads© for portable surveying, since data collection and coding would be instantaneous and visitors may prefer to participate in interactive surveying.
- Utilize point of sale software to collect zip codes, membership information, and email addresses since every visitor must go through this part of the museum. This makes the point of sale the easiest location to collect random data samples.

Front-End Evaluation Recommendations:

- Utilize a front-end evaluation plan for future exhibits, programs or activities in order to create products that are engaging for visitors but also correspond with the museum's mission.

Data Collection Recommendations:

- Make sure those who collect data write clearly and legibly so anyone could pick up their work and code or analyze the data.
- Use premade templates for inputting data into Excel© to save the time it takes to create these sheets and all data is organized in the same fashion.

Supplemental Material Recommendations:

- Be more economical about survey and other material creation for cost and labor efficiency.
- Provide a map with key locations and other pertinent museum and tour information so visitors can return to sites. This can also act as a marketing tool and that can be sold for revenue.
- Create a supplemental reading list for more information about tour topics. Have supplemental reading materials available at the end of the tour or at the NHA gift shop.

Using these recommendations, the staff will be able to gather more data from visitors and learn about their interests and opinions of the museum and its programs which can be used to enhance its programs, marketing, and funding.

Authorship

Section / Chapter	*Author(s)*	*Editor(s)*
Title Page	Jacqueline, Jonathan	All
Abstract	Jacqueline, Jonathan	All
Acknowledgements	Jacqueline, Jonathan	All
Executive Summary	Jacqueline, Jonathan	All
Authorship	Jacqueline, Jonathan	All
Table of Contents	Jacqueline, Jonathan	All
List of Figures	Jacqueline, Jonathan	All
List of Tables	Jacqueline, Jonathan	All
Introduction	Jacqueline, Jonathan	All
Literature Review (Background)		
The Evolving Nature and Purpose of Museums	Jacqueline	All
The Evolution of Evaluation	Jonathan	All
Exhibit Evaluation	Jonathan	All
Educational Program Evaluation	Jonathan	All
Types of Museum Surveying	Jonathan	All
Technology in Museum Evaluation	Jonathan	All
Conclusion	Jacqueline, Jonathan	All
Methods		
Objective 1	Jacqueline, Jonathan	All
Objective 2	Jacqueline	All
Objective 3	Jonathan	All
Objective 4	Jacqueline	All
Objective 5	Jonathan	All
Findings & Analysis		
Phone Log Responses	Jonathan	All
Activity Station	Jonathan	All
Walking Tour Survey	Jacqueline	All
Visitor Satisfaction Survey	Jonathan	All
Summer 2011 Zip Codes	Jonathan	All
Modified Survey Instruments	Jonathan	All
Conclusions & Recommendations	Jacqueline, Jonathan	All
References	Jacqueline, Jonathan	All
Appendices	Jacqueline, Jonathan	All

Contents

List of Figures

List of Tables

Introduction

Evaluations in museums are a key component to assuring museum success, whether success means increasing visitor satisfaction and learning or raising visitation numbers and revenues. Evaluation enables museums to learn what visitors think about their exhibits, programs, or facilities, so that they can strive to make improvements in the future. Ideally all museums would regularly survey their visitors on all aspects of the museum experience in order to better meet their needs, but evaluation is an evolving field and many museums are only just beginning to use evaluation in a regular and systematic fashion. The Nantucket Historical Association (NHA) wishes to use evaluation more extensively and is in the process of developing its evaluation instruments and protocols. Accordingly, the goal of this project was to help the Nantucket Historical Association and enhance the way the museum conducts its visitor evaluation by assessing recent visitor evaluation efforts.

During the peak visitation period of 2011, the NHA had gathered extensive data through multiple survey techniques including face to face interviews, self-administered questionnaires, and other types of surveys. These data sets were the focus of this project and the project team identified several tasks to be completed over the seven week period on the island. First the project team familiarized themselves with the data already acquired by the NHA. These data were then analyzed and any issues the team found were addressed. Key staff members were interviewed so the team could learn the desired outcomes from the collected data analysis. The project team made recommendations on ways to improve the visitor experience at the NHA, based on our analysis of the substantive findings from the surveys. We also made recommendations about ways to improve future visitor evaluation efforts at the NHA based on our assessment of the survey instruments and protocols, as well as feedback from various staff members. The project team hopes that their suggestions for improving evaluation efforts will ultimately aid the NHA in providing even better programs and exhibits for its visitors in the future.

Background

Museums are ever changing institutions and as such evaluation is important to continue operating successfully. In this background section we will discuss the history and purpose of museums as well as how these institutions have changed over time. We will also discuss the evolution of evaluation in museums and the current state of the art for museum evaluation.

The Evolving Nature and Purpose of Museums

Although it may surprise many people, more visitors attend museums in a given year than attend all the major sporting events combined. For example, in 2008 the total attendance at every major-league basketball, baseball, football and hockey event was a whopping 140 million people, but this seems minuscule compared to the 850 million people attending museums in the same year. In an interview on National Public Radio, Ford Bell, head of the American Association Museums, said museums are frequently considered nice amenities, but not a critical "piece in our educational infrastructure." Furthermore, Bell states that the role and purpose of museums are neither well-understood nor well-publicized (Mondello, 2008). This explains the continuous need for museums to attempt to fit into that educational infrastructure.

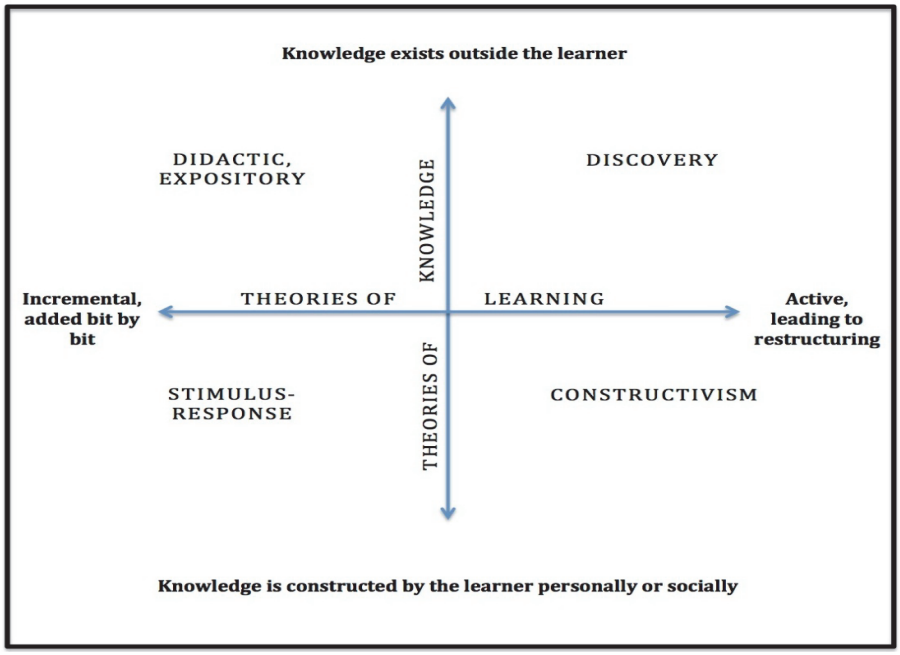
The American Association of Museums (AAM) defines a museum as "an organized and permanent non-profit institution, essentially educational or aesthetic in purpose, with professional staff, which owns or utilizes tangible objects, cares for them, and exhibits them to the public on some regular schedule"(Alexander, 2008, pg. 2). To further understand museums and their goals, we turn to the history of such institutions. The first planned institution that was referred to as a museum, and whose purpose it was to preserve and display artifacts, was established in the 1700s. The word museum has meant many things through history. In classical times it referred to the buildings dedicated to the Muses and where one would go to "muse" or be "amused" (Alexander, 2008, pg. 3). The use of the word museum has evolved in the 19th and 20th century into referring to a building that contained cultural material for the public's viewing pleasure. Continuing along this evolution of the word, the museums themselves evolved beyond the physical walls implied in the original meaning to include open-air museums, eco-

museums and most recently virtual museums. According to Bell, the first museums in America, established when the modern definition of museums came into existence, were influenced by the need to preserve the very new and exciting culture of the world's newest country (Mondello, 2008). Immediately following World War II, museums entered a period of extraordinary achievement and growth. Seventy-five percent of the 8,200 museums existing in the United States in 1988 were founded in the previous 40 years (Encyclopedia Britannica, 2011). Museums became many things for society: "an educational facility, a source of leisure activity and a medium of communication" (Encyclopedia Britannica, 2011). Along with the evolution of the word museum, the research done within these institutions also evolved. Originally the research done within museums pertained to collections and objects. This changed in the 20th century as research expanded to cover museum practices and visitors as well (Alexander, 2008).

As the brief history of modern museums suggests, museums have always played a prominent role in the United States and Western culture. Adele Silver, an educator at the Cleveland Museum of Art reminds readers in her 1979 report on U.S. art museum education that, "in the beginning, there were no … museums. Museums are inventions of men, not inevitable, eternal, ideal nor divine. They exist for the things we put in them, and they change as each generation chooses how to see and use those things" (Alexander, 2008, pg. 11-12). These museums began as "repositories of knowledge and objects" and evolved into places for people to "wonder, encounter and learn" (Kelly, 2004, p.46). This shift of roles is due to the pressure for museums to compete in an entertainment-driven market, which has caused them to change the way they achieve their educational goals as a greater understanding of how people learn developed. To compete in such a market, museums must provide different kinds of exhibits and programs. Typically, 'modern' museums identify their primary goals as maintaining and preserving collections, conducting research and fostering education. These goals are enshrined in the mission statements that museums develop to shape their short- and long-term strategies. For example, as its mission "The Nantucket Historical Association preserves and interprets the history of Nantucket Island and fosters appreciation of its historic significance" (Nantucket Historical Association, 2011).

The mission of museums has changed over time, and the emphasis on and approaches to museum learning have also changed. Museums achieve their educational role through exhibits and the various programs that they offer in-house and through various outreach activities, which now include web-based materials. At the turn of the century there was an emphasis on static exhibits, such as dioramas and mounted specimens, with explanatory panels. These kinds of exhibits have largely been replaced with more dynamic, hands-on and interactive exhibits. Also, educational programming has changed from lecture-based programs to more hands-on activities at the museum, in the community, and online. The science museums have been on the cutting edge of these developments, but the approaches they have pioneered are increasingly being adopted in other museums, such as history museums and art galleries. George Hein, a well-respected researcher of museum education, sees these changes as a shift in emphasis from didactic to constructivist approaches to education and learning. Hein has developed a four-quadrant model of educational theories (Figure 1) that is helpful in illustrating both the range of approaches in museum education and exploring how they have changed over time (Hein, 1998). Thus, Hein's notion of the shift from didactic to constructivist permeates not only the way exhibits are presented, but also the way educational programs are developed and conducted.

Figure 1: George Hein's A Model for Educational Theories (Hein, 1998, p.33)



Hein's model arrays the four main educational theories (didactic, stimulus-response, discovery and constructivism) on two axis (theories of learning and theories of knowledge), as shown in Figure 1. Didactic and stimulus-response approaches are at one end of the theories of learning axis, representing the belief that people learn by absorbing information that has been presented to them incrementally. Discovery and constructivism are located at the opposite end of the spectrum, which stands for the belief that people construct their own knowledge. The discovery and constructivism end of the continuum places emphasis on free-choice active learning and the understanding that learning is not merely the process of adding facts and lessons into a proverbial knowledge tank (Hein & Alexander, 1998). Over time, the shift from the didactic, stimulus-response side of the spectrum to the discovery and constructivism side has led to an increase in museums recognizing that free choice learning is an important way of learning and that they should cater to this mode more effectively. The fact that more and more museums involve unstructured learning has implications for the nature and kinds of evaluations to be conducted in them.

The didactic learning theory is the one of the most common, and by far the most traditional learning theory followed in museums. Typical didactic museums present information to the learner in a sequence and follow the belief that it is the museum's responsibility to show the people what they should know. These museums typically guide the visitor through a series of sequential exhibits focused on showing the learner exactly what they are 'supposed' to learn. Museums do this by providing labels or panels, which describe exactly what is to be learned at each exhibit and by arranging the exhibits in a 'logical' or hierarchical arrangement that visitors are expected to follow (Hein, 1998). As an example of a didactic museum, the Zeppelin Museum in Friedrichshafen, Germany presents the world's largest collection of aviation in a chronological, continuous fashion with descriptions of what is to be learned at each exhibit (Zeppelin Museum Friedrichshafen, 2011).

The stimulus-response theory, is similar to the didactic approach in that it assumes knowledge exists 'out there' and can be acquired incrementally. Unlike the didactic learning theory, however, the stimulus-response theory "makes no claims for the

objective truth of what is learned" (Hein, 1998, p.29). While stimulus-response museums are similar to didactic museums in such characteristics as labels and panels describing the knowledge to be gained and sequential exhibits, the key difference is a "reinforcing component" (Hein 1998, p.29) that provides a stimulus and rewards for the correct response. In the classroom, for example, a student is rewarded for good behavior: a sticker on a vocabulary test, or a piece of candy for mathematics homework (Hein & Alexander, 1998). Stimulus-response museums typically have 'lift-the-flap' devices that reveal 'answers.' Increasingly, they use computer screens where an answer can be selected and a "You're correct!" message will pop up to reinforce what was learned (Hein, 1998). Disney World utilizes some of these screens at their Nemo and Friends Pavilion aquarium at the Epcot Park (Disney, 2011).

The shift from the didactic and stimulus-response side of the spectrum to the discovery and constructivist side is best described as shifting from only focusing on the subject to focusing on the learner as well as the subject (Hein & Alexander, 1998).The discovery method is based around the idea that learning is active and that learners will interact with the material and will somehow change the way their mind works in the process. Active learning often refers to physical learning, or "hands-on" activities that will aid the understanding of the learner (Hein, 1998). Many science and children's museums were early adopters of "hands-on" approaches to exhibits and programs. For example, the Exploratorium, which opened in 1969, was one of the first adopters of this active learning process. With different exhibits for children and adults alike, such as Living Color, a many-colored mural made of thriving bacterial colonies, and Pi Toss, a recreation of the classic Buffon's Needle problem which calculates Pi, the Exploratorium is the leader in "hands-on" and active learning which characterize the discovery method of learning (Exploratorium, 2011). In addition to having innovative active learning processes, the Exploratorium have also been proponents in the development of exhibits that promote active prolonged engagement (APE). "APE is a way of thinking and acting at exhibits that's a bit different from the traditional mode museum visitors often fall into" (Humphrey & Gutwill, 2005). Active refers to visitors who are in control of their visitor experience: deciding for themselves what to do and when to do it. Prolonged means visitors are remaining at exhibits or activities for longer periods of time. Engagement

refers to visitors trying several things at an exhibit which build upon each other for an increased comprehension of the exhibit (Humphrey & Gutwill, 2005). This modern example of discovery learning ties closely into the next method of learning, constructivism.

Finally the constructivist learning method requires active participation by the learner and that the conclusions reached by the learner are not merely validated by conformity to a particular standard but rather by the judgment that the 'constructed' knowledge "makes sense" to the learner. Several things about constructivist exhibits are similar to those of the discovery exhibits, especially those in regards to letting the learner make their own conclusions. A key difference between the two, however, is the validation of visitors' conclusions, regardless of whether they align with other conclusions, especially those of the curators (Hein, 1998). Along with maintaining pace with changing learning theories, museums need to keep pace with other evolving educational requirements, such as standardized curriculum frameworks that vary from state to state and General Learner Outcomes. By pursuing evaluations in this sector of education as well as general museum studies and exhibit evaluation, museums can strive to offer the best overall visitor experience.

The Evolution of Evaluation

Evaluation in museums is a fairly new concept, as the history of evaluations only dates back to the early 1900's. If one was to trace out the changing emphases and approaches in museums first, it is then easy to say that under the didactic approach little visitor evaluation was necessary, since the curator-driven, elitist model 'pushed' information out to audiences. When museums began to develop more visitor-centric approaches to exhibits and educational programs, they needed to know more about what the visitors knew, thought, and wanted. As museums began to consider improving their current exhibits, programs, or facilities to better meet visitors' needs, they conducted evaluations to gather knowledge that would help them with this task. This concept of evaluation only began to occur about fifty years ago. Prior to this, museum studies consisted of observing the behavior of visitors and attempting to analyze it, in order to design better exhibits for them. Many studies were conducted prior to World War II to

determine how well museums were meeting their educational goals, such as those by Benjamin Gilman and Alma Wittlin. Observations from these studies allowed evaluators to determine which exhibits attracted the most visitors and for how long. The goals of these studies were to determine which exhibits provided the most visitor education and create 'effective' exhibits.

Today, there are three major sectors in the world of museum evaluation: general museum, exhibit, and educational evaluation. Each sector has different outcome goals and techniques it uses to gather data. Although some of the methods may overlap, the implementation of the evaluations is often quite different. General museum gallery studies evaluate the quality of the museum itself by focusing on visitor satisfaction and marketing. Surveying, tracking, and observing visitors may be used to gather data about way finding problems, visitor satisfaction with facilities, and visitor demographics. These kinds of evaluations provide information that can be used to improve the visitor experience and aids in marketing the museum. The goal of exhibit evaluation is to produce exhibits that are attractive, engaging, and satisfy visitors' desires, while also meeting the museum professionals' educational goals. Increasingly, museums of all kinds are using front-end, formative, summative and remedial evaluations to make successful exhibits from start to finish. Surveys, focus groups, tracking studies and observational studies are used here to gauge interest in exhibits and make sure they meet the goals of the visitor and the museum. The last main area of evaluation in museums has to do with programs and education. This area is especially important in asserting the museum's role in the informal education sector as a place of learning. Increasingly, government and private funding sources are demanding that museums conduct rigorous evaluation of their educational programs to demonstrate and document their educational purposes and value. The goal of these types of evaluations are to ensure that the programs offered meet the needs of the teachers and students, respond to different learning styles, achieve the various prescribed learning outcomes, and conform to appropriate curriculum frameworks. Here evaluations encompass on and off campus programs as well as online resources that could be beneficial for schools. Focus groups with teachers and other educational professionals are often used initially to design programs to ensure they meet these different needs. Typically, pre and post visitation surveys are used to access student

learning and teacher satisfaction. Museums that can maintain strong evaluations in each group above will be able to provide excellent visitor experiences. Of the three major areas above, we focus here on exhibit evaluation and educational program evaluation in accordance with the needs of the Nantucket Historical Association.

Exhibit Evaluation

Observational studies were the primary form of visitor evaluation in the early years of audience research, and are now used in almost every sector of museum evaluation. The purpose of these studies was to capture the behavior of visitors and determine how effectively a program or exhibit was running. An example of this was an observational study run by Benjamin Ives Gilman of the Boston Museum of Fine Arts in 1916. He photographed people looking at exhibits and made conclusions about which layouts of picture mounting were most pleasurable for visitors and which caused the most stress. From his observations the museum was able to adjust and make more pleasing exhibits for their visitors (Hein, 1998).

With backgrounds in psychology, Robinson and Melton (1935) were drawn toward observational studies with clearly measurable end-points. They developed methods of tracking visitors and measuring how long visitors stopped at particular exhibits. These methods can be used to gauge the effectiveness of exhibits or if a program, such as a walking trail, has obstacles that should be removed. Museum staff could use the figures, such as the one shown in Figure 2 below, to gauge the effectiveness of the museums layout. They could also determine if their visitors followed a random or ordered walking pattern if that information was of importance to the staff. Timing how long visitors stay at different locations (‘dwell times’) allows staff to judge levels of visitor engagement. Longer dwell times were (and still are) assumed to be indicative of the levels of visitor interest and engagement, and ultimately learning. Figure 3 illustrates a heat map, which displays a combination of dwell times and walking paths. These can be used to show how long visitors stay at certain areas of the museum, in this case the darker the color means the longer a visitor was in that area of the room. Attracting power is a measure of the ability of an exhibit or program to draw in visitors initially, and dwell time is a measure of how long they stay at that exhibit. Researchers at the Exploratorium have taken these notions further and now try to design exhibits that promote ‘active

prolonged engagement' (APE), and have identified various exhibit characteristics that increase attractiveness and holding power. APE exhibits have been shown to enhance visitor learning and satisfaction (Humphrey & Gutwill, 2005).

By plotting the number of visitors remaining at the exhibit against time, evaluators have developed visitor decay or J curves. Figure 4 shows decay curves for four different exhibits at the USS Constitution Museum. Evidently, the exhibit "Investigate!" was more successful at holding more visitors for a longer time, since 50% of visitors stayed for 15 minutes or more. Such graphs are helpful in showing the relative abilities of exhibits to 'hold' visitors, and they dramatically illustrate the common finding that very few visitors stay at any exhibit for very long, which is why museums fight for every minute of their time (Hein, 1998). In a study conducted by Beverly Serrell, visitors were 'cued' (i.e., prompted by signage or interpreters to think about a particular concept, phenomenon, or feature) at certain exhibits to see if that would increase the time spent at each one. She reported that 12 out of 13 exhibits increased their holding power on visitors when cues were available, since it allowed visitors to ask questions and learn more (Serrell, 1998).

Figure 2: Example of a Tracking Study of a Visitor's Walking Path in a Museum (USS Constitution, 2010)

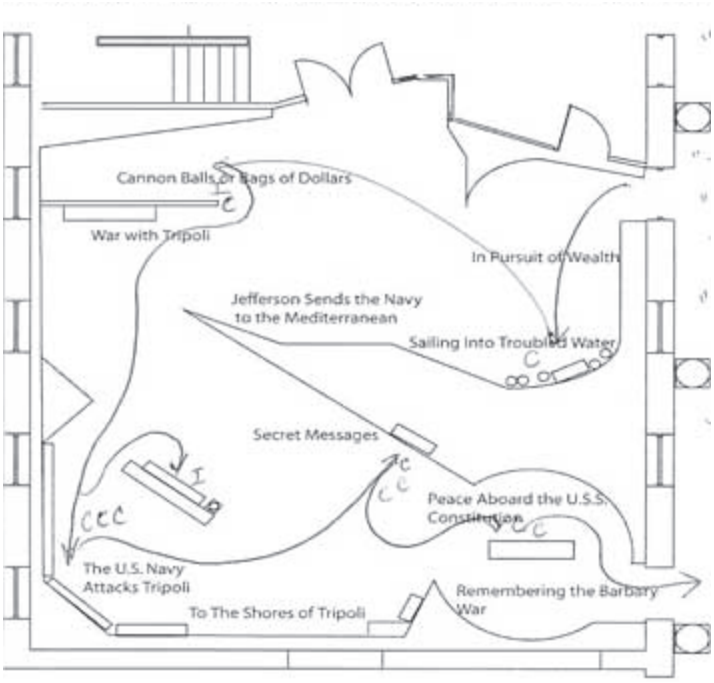
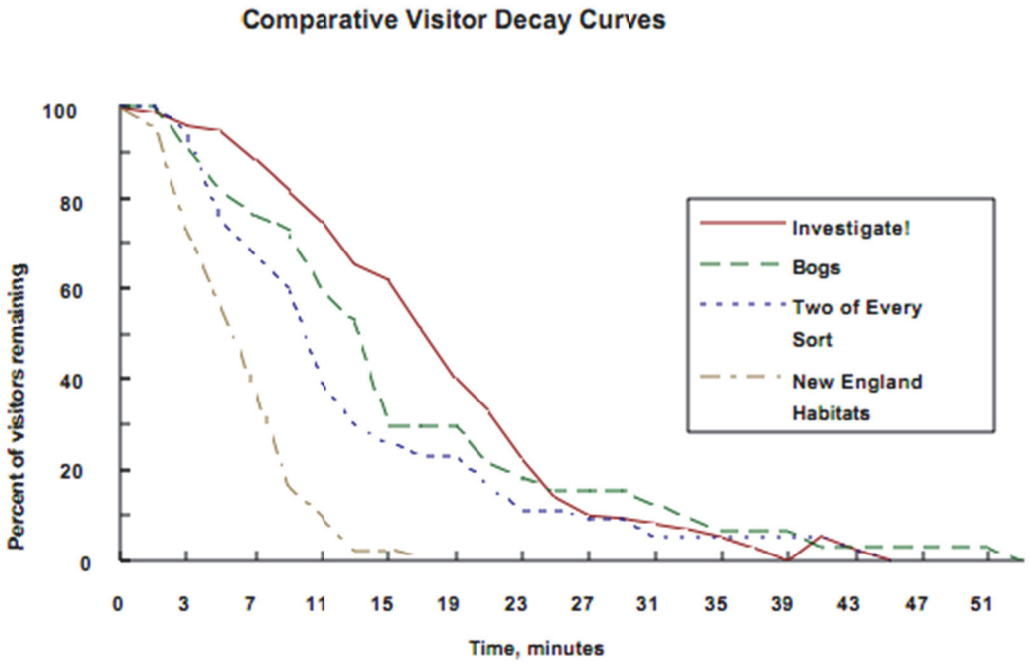


Figure 3: Heat Map Showing the Combination of Dwell Time and Walking Paths (Bickersteth & Ainsley, 2011)

Figure 4: Visitor Decay or "J" Curve (Bailey, Bronnenkant, Kelley & Hein, 1998, p. 22)



These types of techniques can be used to gather data on visitors such as group dynamics, as seen in the following studies. Korn (1995), using these concepts found that only about 6% of museum visitors travel alone, which emphasizes the need for museums

to appeal and cater to groups in the design and layout of exhibits and facilities. Studies conducted by Deborah Benton displayed these family structures inside of museums. She observed groups of families at four different New York museums and noted how they went about viewing exhibits. What she found was that families with strong parental leadership tended to spend more time disciplining their children then looking at exhibits while looser families were able to see more and enjoy themselves. These social dynamics tend to play a large role in museums. Studies show that of these groups that go to museums, whether children or adults, social agendas tend to rule how people act and observe. Sometimes visitors will only go to museums to meet other people (Falk & Dierking, 1992). On top of the social aspect, museums have to work with the physical toll museums take on visitor. A phenomena known as 'museum fatigue' will set in on visitors who are surrounded by too many collections and do a lot of walking to see them. This mental phenomenon results in physical ailments such as pain in muscles and can cause visitors to leave sooner than expected. Some museums have taken action in combating this problem by setting up seating areas for visitors to view collections from, which gives them a break from walking around (Berry, Farber, Goldspiel & McAlpine, 2005). Along with the amount of walking visitors do, the paths they take effect layouts and exhibit placements. Visitors tend to follow random paths while making their way around a museum. Curators can combat this by modifying layouts or creating paths visitors must go through to send a specific message. Tracking studies can be conducted to determine these paths, which are hard to combat since every visitor is attracted to different exhibits and thus will choose a random path (Kaynar, 2004). Museums that take these factors into account can use this data to attract or maintain a steady flow of visitation.

Typically, museum professionals distinguish between three or four types of exhibit evaluation. Miles (1993) distinguishes between front-end, formative, and summative evaluations that are conducted before, during, and after the installation of an exhibit (Table 1), whereas Screven (1990) adds a fourth type, remedial. According to Screven, front-end, formative, and remedial evaluations are used throughout the planning, testing, and early operational phases of an exhibit with an eye to developing an improved product (Table 1), while summative evaluation is conducted in order to judge the success of the exhibit.

Table 1: Excerpt from Chandler Screven's (1990) and Roger Miles (1993) Classifications of Evaluation (Bitgood & Shettel, 1994, p. 72-73).

	Screven's Concept		
	Planning Stages	**Testing**	**While Operating**
Improvement	Front-End	Formative	Remedial
Judging Success	-	-	Summative

	Miles' Concept		
	Planning Stages	**Testing**	**While Operating**
Before	Front-End	-	-
During	-	Formative	-
After	-	-	Summative

When planning a new exhibit or program it is beneficial for museums to run some form of preliminary survey to gauge if their plans will be a good fit. Borun (1991) remarks, "Learners, whether adults or children, students or museum visitors, are not empty vessels to be filled with information," (p. 44) so finding out what they want and weaving it into the museum's goals will improve the quality of a program. Front-end evaluations take a sample of visitors and interview them to find out about their level of understanding, misconceptions, feelings and ideas pertaining to the subject matter. Typically, these evaluations are conducted as focus groups, in which groups of eight to twelve people discuss topics led by a well-trained moderator (Rubenstein, 1990). Results from such studies can guide staff to modify the plans for an exhibit or program in order to better meet the needs of the intended audiences and avoid misunderstandings. This will allow the program to speak to both experienced and new museum visitors (Borun, 1991, p. 43).

The benefits to performing a front-end evaluation are that fundamental problems can be addressed before considerable time and effort is expended in building an exhibit that then fails to perform as desired and expected. Naïve notions, or unexpected reactions to a trigger, can be discovered before it is too late and visitors get the wrong information from a display. This is also a great time for confusing language to be removed and be replaced by reinforcing statements and well-designed visuals (Borun, 1991). Front-end learning is a great way to start the evaluation process but can be taken to the next level with a formative study.

Formative evaluation can be used alongside front-end evaluation during the planning stages of an exhibit, but is mainly used during the design stages of an exhibit's life. The goal of this type of evaluation is to determine if the exhibit will work based on a systematic question to start the process. This is usually determined by creating a mock-up or prototype of the planned exhibit and monitoring visitor interactions with it. Formative evaluations are "quick and dirty" (Screven, 1993, 60) due to their low costs and reliable data, which can come from many methods of approach. Great sets of unobtrusive, or observational, data can be gathered by monitoring time spent, levels of involvement and apparent interest of visitors. Any apparent problems can be resolved quickly due to instant feedback from simple questions from staff if flags are raised (Screven, 1993). Formative evaluations are great at finalizing a set-up before a program is released to the public. Once this happens post creation evaluation can take place in the forms of summative or remedial action which will gauge the success or identify problems of an exhibit.

Measuring the success of an exhibit, or identifying problems said exhibit may be having once open to the public, is key in creating other successful programs and in preventing exhibit failure. Summative evaluation asks how successful a completed exhibit is. This can be answered by surveying visitors, conducting trail patterns, timing visitors at exhibits, as well as other observational techniques. Summative evaluation is a good way to get data but does not necessarily tell one what to do with it. It is up to staff to determine if action should be taken on other exhibits or the current one based on the results. The gathered data can be used to determine if the exhibit should be continued, moved, repeated or discontinued based on the original goals set by the staff or director. According to Chandler Screven (1976), remedial evaluation, a twin brother to summative, could be used to analyze an exhibit that is not performing as well as planned. In these situations the data gathered is used to help correct the situation as opposed to just judge how well the exhibit is doing. Although arguments have occurred over the need for this subcategory, with Roger Miles being the primary opponent, remedial evaluation is a good way to identify areas where improvement can be made on a completed exhibit (Bitgood & Shettel, 1994). Both summative and remedial evaluations are great ways to wrap up the

evaluation process on an exhibit and when used after front-end and/or formative evaluation types can produce excellent data on an exhibit.

Educational Program Evaluation

A major way for museums to evaluate their educational programs sector is to tie exhibits or programs into the General Learner Outcomes (GLOs) and standardized curriculum frameworks so they can be intertwined with the museum's programs. GLOs are the over-arching goals in grade school curriculum (Implementation, 2011), and focus on observable behaviors such as student effort, work habits and overall conduct. Standardized curriculum frameworks are different in each state and set guidelines for curriculums. By making programs or exhibits that align with a school's GLO system and thus curriculum, museums attract field trips and other educational visits that are important in asserting the museums role as an informal learning center. Funding or grants, a critical part of museum development, can also be attained by museums for being gateways of learning for schools. It is important for museums to pay attention and adjust to current General Learner Outcomes in order to be considered a key role in education. By demonstrating that their exhibits or programs align with the GLO's, museums gain the ability to apply for these funds or grants. Without adequate funding, museums cannot maintain their collections or strive to attain new ones, which may better the quality of learning presented by the organization (Implementation, 2011).

Evaluation plans became mandatory for proposals for exhibits and programs in the science areas in accordance with the National Science Foundation. This was done to make sure museums were presenting visitors with the best possible learning environments. Informal learner outcomes were developed to better foster learning for an individual visitor based off of frameworks and GLOs. The categories for evaluation include awareness or knowledge, engagement or interest, attitudes, and behaviors, which as defined by the National Science Foundation. These are a much broader set of outcomes museums try to fulfill to remain influential in the informal learning sector (Diamond, Luke & Uttal, 2009). John Falk and Pauline Brooks conducted a study of the California Science Center's role in the educational infrastructure of Los Angeles California. They were able to determine that the museum was considered to be middle tier resource by visitors as far as an informal learning center, along with books, the

internet, on the job experience, etc. (Falk & Dierking, 2000). Studies like this can assist museums in determining what they may need to improve in order to become more influential in educational areas. Due to the idea of museums being places of learning, reforms in education were highly influential to the museum industry and developed heavily based on greater interest in educational advancement (Hein, 1998).

As education in schools began to move away from traditional forms of learning into newer concepts of learning, new forms of evaluations emerged in place of traditional museum research. Traditional research methods did not produce very useful results due to their lack of funding, difficulty in finding a good subject group and trouble determining direct effects of treatments. Evaluations with specific purposes to increase learning at museums were typically well supported endeavors. These new forms of evaluation could gather useful data with any visitor and since they were used for a directed cause not an overall assumption, they produced results which could immediately impact an establishment. As education moved towards new hands on learning approaches, where the interests of students were taken into account, evaluations became more interactive with visitors. This created a more natural setting where the studier was able to attempt to understand the reasons behind a visitor's actions in a less biased fashion (Hein 1998). This hands on or active learning approach, which spurred from educational reforms, is now commonly used in museum evaluations today in order to really understand what the visitors are interested in.

Museums need to know what different audiences want so they can design more attractive programs for visitors. Drivers behind this include museum's needs to promote themselves as educators, to compete in the entertainment sector and to demonstrate a continuing relevance to society. All of these drivers can aid museums in attracting and maintain funding which is needed to keep the museums operating. Museums use evaluation techniques in order to meet these needs. Evaluations can be conducted on membership programs, facilities, staff and other aspects of the museum that are not part of the typical classifications.

Types of Museum Surveying

Surveying is a form of data collection and analysis from a group of individuals which allows administrators to learn and act on the results. Surveying plays an important

role in gathering data for many types of evaluation, and is very useful in both educational and exhibit evaluation. The key to creating and enforcing an effective survey is proper planning. The overarching question that to be answered and gains versus losses must be clearly defined to the team implementing the survey to ensure success. These well thought out surveys will produce data that can then be coded and presented to the museum staff where action can be made to improve an exhibit if possible. Staff can be trained to carry out these methods or outsiders can come in with less bias and formally conduct the study. The four main types of surveying seen in museums are: face-to-face interview, telephone interview, mail surveys and partial self-administered surveys, but there are other methods (Adams & Nichols, 1999). An approach to making a good survey can be seen in Table 2. Some of these types of surveying that can include people who are not members or visitors of the museum are considered to be market research. These can help attract new members and get a broader scope of data (Kelly, 2004). This section will focus on the main types of surveying that the project team will be dealing with at the NHA.

Table 2: Steps for Conducting a Well-Planned Survey (adapted from Borun, 1991).

1	Research the origins of the study (has it been done before).
2	Develop the study (create logical steps).
3	Collect data.
4	Analyze the data.
5	Report the results.

Face-to-face interviews are composed of a trained staff member or a professional interviewer questioning visitors in a natural environment where the situation can be controlled and comforting for the visitor. This is fitting for long or difficult surveys or ones where the subject has little knowledge or interest in the matter. It is key to have a good interviewer who has engaging tones and remains unbiased and on topic as he or she conducts the survey in as little time as possible (Adams & Nichols, 1999).

Adams and Nichols (1999) noted, telephone interviews are excellent for preliminary studies, such as front-end evaluations, following up other on types of surveying or aiding in conducting a specialized group study. These are good surveys because they take little time to complete and can be used for visitors and non-visitors, such as when inquiring about local knowledge on a topic. Again the interviewer will need

some form of training or skill since it is harder to connect with someone when the two are not face to face. The NHA did not survey visitors using this method but they did collect basic information from those who called the museum, such as zip code and reason for the call to develop some location data as well as potential issues.

Partial self-administered questionnaires involve staff members or volunteers handing out surveys, usually after visitors have viewed a specific exhibit, participated in a particular program, or as visitors leave the museum. They are self-administered because visitors take them by following instructions on the survey itself; they are 'partial' in that the only data collected is based off of the limited questions provided. Museums, including the NHA, administer these to gather data on visitors experiences in large numbers, since they can be administered to large groups with only one director. The problem with these surveys is that it takes time to administer them and people will not always give that time. There are also a lot of opportunities for biases such as poor population representation, inaccurate responses or if questions are worded to pressure answers in a certain direction. Since certain visitors, such as those who had a very good or bad experience, may be more apt to take the surveys, these surveys can produce skewed data. However, data from these can be useful in getting program specific information and data can be easily acquired (Adams & Nichols, 1999).

The last major form of surveying is mail in questionnaires. These can be used to gather information from non-visitors and people in a bigger region than just those who visit the museum. To conduct these surveys candidates are sent a questionnaire with a cover page from the director introducing the museum or bring a survey home from the museum which they mail back once complete. Usually the importance of each individual's participation is stressed and incentives may be sent to try and get a better response rate since receiving 40-50% back is considered a success. The respondents in this type of surveying have more time to honestly answer the questions, although if confusion occurs no one can assist them (Adams & Nichols, 1999).

Technology in Museum Evaluation

With the development of digital technologies, there has been an explosive growth in the use of new techniques for conducting evaluations, such as the use of motion detectors to track people walking by an exhibit, computer interactive programs that let

visitors answer questions or simulate an event, and interactive websites. These sites can count the number of clicks to act as an observational study or question viewers about a wide range of subjects. Other methods being used to gather information from visitors includes post cards that can be from a specific event, questions and observing conversations from staff on the floor and questionnaires that are filled out during or after a visitor goes through a certain path in the museum. This approach shows how observational methods like tracking studies can be combined with qualitative studies to get well-rounded and more specific data. Filming focus groups or exhibits is a great way to combine observational and other evaluation data to get a complete set of information about a specific program or exhibit (Kelly, 2004). Each technique listed above can work independently but probably provides the best results when used in combination with another type. The techniques used to evaluate museums have evolved over time and are becoming more sophisticated as technology improves creating these new devices for monitoring and analyzing visitors. Although many changes are being made as far as the way visitors are being studied, the concepts still stem from the original observational and fall under the classifications of front-end, formative, summative, and remedial evaluations.

It is typical for ten percent of a museum's exhibit budget to be utilized for evaluations. That being said there is a lot of room for the use of technology in the evaluation process, so long as it can justifiably save time and produce results. This is especially important in smaller museums where man hours are limited. Using radio frequency identifiers, or RFIDs, museums can track visitors as they make their way from one exhibit to another. This has been done in the past by providing visitors with lanyards; however, it can skew results since the visitors know they are being tracked. A more unobtrusive way of conducting this type of tracking study is by using the cell phones almost all visitors carry. In the past the use of cell phones in museums was frowned upon; however, in an age where society expects information immediately, museums now encourage their use as an additional learning resource. Cell phones emit three types of useful signals for tracking purposes: temporary mobile subscriber identity (TMSI), Blue-tooth and Wi-Fi. TMSI signals are always changing but unique to each phone making them anonymous counters and location providers. Blue-tooth signals are embedded in

almost all new phones and can provide the countries visitors come from by connecting to its permanent Media Access Control (MAC) address. Wi-Fi devices can be probed for time and date locations of visitors that can be used for accurate dwell times and walking paths of visitors. When used together, these signals, which all can be tracked from cell phones, can produce unobtrusive tracking information about a visitors experience in the museum. A case study using these technologies was conducted in a retail store looking for the same kinds of data as the museums. The store was successfully able to record and graph the number of visitors per day, the number of visitors who returned to the store over a three month period and create a 'heat map' which displayed popular locations in the store based on dwell times. The store was only able to collect data from 2G GSM networks but did display successful data collection. Depending on the size and layout of the museum multiple signal sniffers, or signal gathering devices, would need to be installed to collect accurate samples due to different signal ranges. Once a successful set of locations have been installed the tracking data can be very valuable (Bickersteth & Ainsley, 2011).

A newer sector of exhibit evaluation involves the use of hand held devices which contain surveys that can transmit and record results to staff, skipping the coding step of data collection. This was implemented in the Cleveland Museum of Art using IBM's Predictive Analytics Software (PASW). The staff was able to create surveys, administer them via handhelds as opposed to paper and the results were automatically sent to staff to show visitor satisfaction in real time. The museum's marketing campaigns saw a much more direct effect on visitors since the data was gathered and made available to staff so rapidly, which allowed them to direct advertising to areas visitors were most interested in (Cleveland, 2009). The Boston Museum of Science also implemented a data collection and administration system that gathered instant feedback from visitors. The museum used an online survey generating and data analyzing software, Checkbox Surveys, on hand held devices to collect satisfaction information from visitors. The staff then displayed the results on LCD monitors, which were incorporated into an exhibit, which allowed the visitors to read some of the information such as gender, dwell times and reactions to exhibits. The museum hoped to show visitors that surveying was a tool used to improve their experience, not a waste of their time (Case, 2011). Improving technologies

developing in the realm of museum data collection that could save man hours and provide instant feedback to staff may be an excellent supplemental way of surveying visitors. Technology has benefits, but could also scare away certain visitors who are not accustomed to it. If used as a supplement to standard evaluation techniques, technology could be the future of surveying in museum evaluation.

Conclusion

As learning in society evolved from a didactic to constructivist approach, museums also evolved into centers of free learning. Simultaneously, evaluations evolved in order to keep pace with museums growing needs for more information about their visitors' needs and expectations. The Nantucket Historical Association's mission is to preserve and interpret the history of the island and foster and appreciation of it in the community. They are using the tools of evaluation to try and learn how satisfied their visitors are and how they can improve the visitor experience. Over the summer the NHA conducted surveys and plans to evaluate different aspects of its programs, exhibits, facilities etc. like many museums have done in the past. The project team assisted them in analyzing and coding the collected data and then made recommendations for improving protocols and instruments for future surveying and analysis.

Methods

The overarching goal of this project was to help the Nantucket Historical Association assess and enhance the way the museum conducts its visitor evaluation. In order to accomplish this goal, the project team identified five project objectives and various associated tasks.

- **Objective 1**: The project team clarified the scope and purpose of the visitor studies conducted by the NHA through a series of interviews with key staff members.
- **Objective 2**: The project team coded and analyzed the data previously collected by the NHA.
- **Objective 3**: The project team refined questions and response categories used in the previous NHA survey instruments and created new model questions for use by the NHA in future visitor studies.
- **Objective 4**: The project team developed and evaluated several different formats for the presentation of the data and findings in order to better meet the needs of the various audiences within the NHA.
- **Objective 5**: The project team created model survey instruments and implementation protocols, and made several recommendations about what kinds of surveys should be implemented in the future.

Objective 1

In order for the project team to make recommendations about programs, exhibits, or future survey instruments and protocols we needed to gain a better understanding of the purpose of the studies conducted previously by the NHA as well as some sense of what staff members hope to achieve through evaluation in the future.

The project team interviewed key staff including William Tramposch, Executive Director, Kim McCray, Director of Interpretation and Education, Marjan Shirzad, Director of Outreach and Special Programs, Chris Mason, Manager of Interpretation, and Claire White, Education Aide. The project team conducted short informal, face to face, semi-structured interviews. In these brief interviews we asked permission to record and

quote the individuals if needed, and kept detailed notes of responses. From these interviews the project team learned the overall purposes of the studies, reasons for looking at certain areas of the museums and programs over others, and any differences in motivations that needed to be considered when analyzing or reporting the data. Some examples of questions we asked NHA staff included:

- Why do you think it is important for the NHA to conduct visitor evaluations?
- Regarding previous evaluations:
    - What kinds of evaluations have been conducted at the NHA in the past?
    - What were some of the most important things that you have learned from those evaluations?
    - What changes have been made to exhibits, programs, or facilities based on the feedback from the evaluations?
    - How have you modified your approach to evaluations over time? Why?
- Regarding the current evaluations:
    - How did you decide what aspects of the museum you wished to evaluate?
    - Why did you choose these particular evaluation methods?
    - How were the protocols developed? Were pilot tests conducted?
    - What do you hope to learn from these evaluations?
    - Who is the primary audience for the findings from the evaluation?
- What do you think will need to be evaluated in the future?
- Who in the museum is the audience of the results of visitor survey data?

Other staff members and volunteers involved in development, implementation, administration and interpretation were also informally interviewed about their involvement in surveying activities and their opinions on areas to focus on in the NHA's system. These individuals were selected based on recommendations from our sponsors. Some questions for these individuals were:

- Were there any difficulties associated with administering the survey? If so, what?
- How was your sample group determined?
- Are there any extenuating circumstances regarding survey development and administration that will need to be accounted for in data analysis?

Focus groups were used on staff members, such as the Development Team, to get their opinions about certain aspects of surveying instruments and what information was most useful to their group. Knowledge of the attitudes of staff provided important evidence to go with data collected about visitors, in that it taught the project team what the staff is interested in learning from evaluations. The group asked permission to quote any staff members that the team interviewed.

Another important task that aided in completing this objective was to review survey instruments used by the NHA as well as any relevant documentation. The project team gained as much background knowledge as possible on any protocols or instructions used in the Association's surveying. The team also reviewed surveys from previous years and observed the progression made in the NHA's evaluations as well as identified what kind of data they were looking to acquire at this time. To further our background knowledge, memos and other important or relevant documents were studied.

Objective 2

Upon arriving at the NHA, the project team determined if any data had already been coded and entered. The team created protocols, in conjunction with the museum staff, and used these to code and enter the remaining data. Appendix B shows examples of the raw data that needed coding. Much of the raw data from the original surveys had been entered into MS Word files. The team created Excel© tables, charts and graphs in order to better manage and analyze the results. To code the data each team member looked at the same survey questions and skimmed answers trying to identify patterns or common responses. These common responses were grouped into categories that attempted to encompass all of the possible responses, along with an 'other' category for the outliers. After we each created lists of response categories we traded them and attempted to code the section. This allowed the team to identify responses that were not covered and determine the ease of the coding system. This was repeated for each question on every survey and once the team was satisfied with the coding rubric, it was shared with our liaisons, so they could go through and determine effectiveness. This calibration of coding schemes allowed the team to create an effective way to group responses and eventually present the data.

Next, the team analyzed the qualitative and quantitative data hoping to find trends that shed light on the nature of museum experiences. This was done by identifying multiple summary statistics to aid in finding key patterns. One of the key pieces of data examined by the team was zip codes collected from different activities over the summer. These were grouped into regions and assigned codes that were then put into bar graphs to show frequency and state regional maps to show more detailed locations. The team also looked at expressed levels of satisfaction, what visitors would remember the most, and the times visitors preferred walking tours to be given from the NHA's summer walking tour surveys. A general visitor satisfaction survey and activity station observations were also analyzed to provide the NHA with details about what brought visitors to the museum, if they came to see the new film, *Nantucket!*, or not, etc. Statistical data already collected by the NHA such as percentages of visitors attending a certain program was compared to analysis conducted by the team, such as visitors who said they would attend the program in an entry survey they took. Data like this uncovered attracting powers or survey wording biases effecting visitor movements in the museum. The team also looked for outside assistance in making recommendations for future evaluations based off of the coded data from recourses the staff suggested. Based on any patterns or trends uncovered by the data, the team suggested ways and areas to collect supplemental data to fill any gaps.

Objective 3

The project team created additional questions and refined existing ones to supplement and complement the surveys and interviews already conducted at the NHA. The team also developed additional survey instruments for areas that the team felt would provide useful data, such as the film and email questionnaires. This was done to add or clarify information in previous surveys that may have failed to collect valuable data. The team went over existing survey instruments with staff from all departments to determine which questions must be kept and which could be removed. Then the team tested the modified versions of the instruments to see if better data was produced, such as higher response rates or answers that are more specific. We tried to identify potential gaps and inefficiencies in the evaluations, which we replaced with new questions or survey types to allow the NHA to gather the best data. These gaps became apparent after our initial

analysis was complete. The reason for making improvements to the evaluation plan the NHA already has is to make sure they are covering all areas of concern to visitors in the most appropriate manner possible. By creating and testing new survey instruments now, the team hopes the NHA will be able to more effectively survey their visitors in the future without having to make major adjustments to the instruments when time is an issue due to high visitor capacity.

Based on our initial review of some of the NHA materials, the project team saw possible ways to improve the survey instruments. We looked into shorter, more concise surveys, as well as allowing the visitors to self-administer the survey versus orally supplying answers to an NHA staff member. Another survey supplement we considered was a set of ranking questions. For example, instead of asking visitors, "Did we meet your expectations?" we provided visitors with a Likert scale that they could rank their visit on (i.e. 1 being not at all to 5 being extremely.), which will aid the NHA later in the coding process. See Figure 5 for an example of this. The project team also wanted to evaluate how the internet and email surveys might aid the NHA. The team explored alternative questions, question wording, and response categories with museum staff in order to help improve evaluation methods and ultimately the visitor experience.

Figure 5: Sample Question from Previous NHA Survey.

Previous NHA Questions	Refined NHA Questions
13. Did we meet your expectations? How can we make your visit better?	**8. How satisfied were you with today's visit?** **1 2 3 4 5** **Not at all Extremely** **9. How can we make your visit better?**

The project team conducted some surveying on the floor to gather certain data for NHA staff. The team administered their refined visitor satisfaction surveys orally to visitors on a busy day prior to a local celebration, see Figures 14 and 15, to see how effective it was, and attempt to uncover any issues. The team stood in two locations (one in the morning and one in the afternoon) that were predetermined to be effective for surveying visitors by the NHA staff. We counted all of the visitors who walked past us with a hand held counter and attempted to survey every third visitor. The team ended up surveying 30 of the 90 visitors who walked past them over the course of four hours. The focus of this survey was to determine the response rate for individual questions and the completion of the survey, the content itself was not of high importance. Of the 30 visitors who were approached, 27 of them participated, with the three refusals having to do with being late to catch a ferry (two) and having to hurry through the museum with a child. Of the 27 people who took the survey every respondent answered every question. Multiple respondents commented on how short the survey was and how it was very easy to take. The time elapsed to take the survey was around two minutes and always under three minutes, which is what the team hoped to accomplish with its predecessor taking at least five minutes to complete. The team feels that the modified instrument asks the questions the staff wants answers to and does not take up much of visitor's time. The team is confident that the museum will be able to administer the new instrument and collect data in higher capacities due to its reduced time and refined questions.

Supplemental surveys conducted by the team were done in person, anonymously and with adult visitors. The data from these surveys was coded so persons could not be identified but their responses could be used to portray collected data about the NHA. Since surveys are optional, applied consent was the main way the project team respected visitors' privacy.

Objective 4

The project team compiled all of the collected data and presented it to the relevant staff, so that changes can be made to improve the performance of exhibits, programs or other systems in the NHA. This was done by creating multiple formats of data presentation and determining which would be best for different parties at the NHA to

allow more effective presenting. Some statistical data reinforced points the staff already knew, such as the success of a program, which could be used to boost morale in the museum. Information on who will be seeing what data came from interviews of important staff members as mentioned above, as well as persons of interest the project team felt should see the outcomes.

Data was presented differently to Directors than staff based on needs, interests and responsibilities; however, the project team kept the integrity of the original data in doing this by using different display methods for particular audiences. Bar and pie charts as well as tables were used along with oral presentations to make sure the importance of each data set was displayed and presented in a way that the particular audience could gain the most use from it. The team created a list of the most important points from their analysis to show to all of the staff so they would take in the important information. Prior to making presentations of the results, the project team analyzed the presentation methods as the surveys were analyzed to make sure appropriate points were made and nothing was lacking or unnecessary. This was done by briefly interviewing staff members, other Nantucket IQP students and Professor Golding to get outside opinions.

Objective 5

After analyzing the data from NHA surveys and additional work done by the project team, recommendations were made about future surveying and current programs and exhibits. The project team spent a lot of time familiarizing themselves with preexisting surveys and noting trends or patterns in the data. Based on this, recommendations were made to make future surveys more effective. Changes such as making surveys more direct, changing formatting for easier data collection to coding transitions or suggesting new ways to gather data were implemented. The project team created coding protocols and added to and adjusted survey protocols to make implementation and conduct universal for future evaluations. This way future surveying can be easily input into the NHA's system and can be compared on a month-month or year-year basis without needing modifications. The team hoped to aid the NHA in creating Front-End protocols and survey instruments so that they can analyze future

exhibits, something they have not been able to do due to a lack of man hours, especially during the summer season.

Information collected from surveys was also used to make recommendations about current programs and exhibits. By analyzing the data collected by the NHA and the project team, performances of current NHA exhibits and programs based on visitor feedback was displayed. This was similar to a summative evaluation since the exhibits and programs are already active. Examples of this include providing walking tour guides with microphones or training them to speak louder, displaying a sign explaining to visitors why the museum has to be cold, and improving the communication of the calendar of programs and activities for the visitors. Changes to improve holding power or attracting power can be made based on these recommendations that have the potential to improve the visitor experience at the NHA.

Museum evaluations continue to evolve to meet the changing needs of museums in order to reflect the lessons learned about how to conduct audience research. The Nantucket Historical Association wants to conduct more evaluations in a more systematic fashion. The project team plans to use the research they have done and their findings in the data the NHA has already gathered to assist them in achieving this. By analyzing the current data and obtaining the knowledge of what the staff hopes to get from their recent evaluations the team plans to setup future protocols that will aid the NHA in future evaluations and save them time and staff hours on the preparation and coding stages which will allow them more time to be on the floor with the visitors.

Findings and Analysis

During the summer museum season of 2011, the Nantucket Historical Association surveyed its visitors to collect data on visitor satisfaction, opinions, and demographics. NHA staff implemented visitor surveys on the floor, during walking tours, and at an activity station and information was gathered from people calling the museum in phone logs maintained during this period. Using the data collected by NHA staff, the primary objectives of the project team were to:

- Code and analyze the data collected via these methods.
- Identify areas where improvements could be made in survey instruments or collection protocols.
- Create improved survey instruments and protocols for future visitor evaluation efforts.

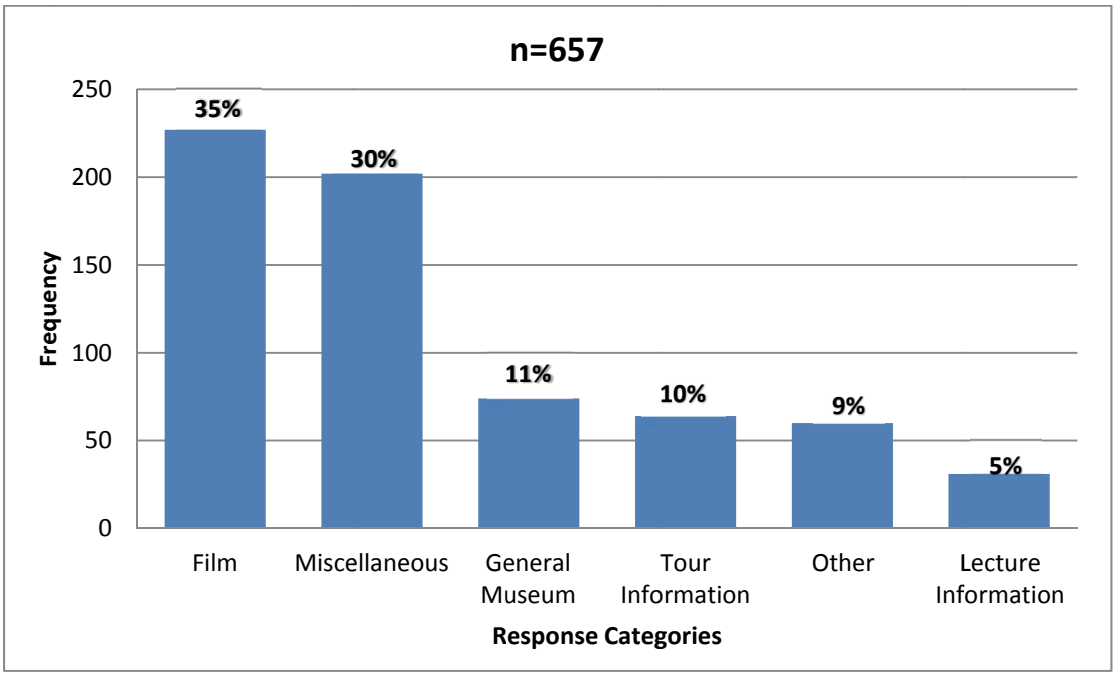
In this chapter of the report we will describe our findings from each evaluation tool used by the NHA as well as our suggestions for the development of modified instruments and protocols for future evaluations.

Phone Log Responses

As part of the summer 2011 surveying efforts, the NHA kept phone logs of calls to the main visitor information number and staff recorded the nature of the call, the caller's zip code, and any other pertinent information obtained during the call. Reasons for calling were grouped and coded by the team. Six hundred and fifty seven (657) calls were logged. One hundred and ninety nine (199) of the calls (30% of that total) were about miscellaneous specific events or museum entities ranging from a question about a brown bag lunch speaker to a question about the Mill (one of many NHA properties). Since these calls covered a wide range of miscellaneous topics, it was not possible to sub-divide them into any meaningful categories and they are grouped together under 'miscellaneous' in Figure 6. These calls however did have enough responses to keep them out of the 'other' category which contains single or 'random' responses. The remaining 456 (69%) of calls fell into five distinct categories. Not surprisingly, 11% of the callers requested general information about tickets or museum hours, while a further 10% of calls were about tour times and information. The figure that stands out, however,

is the 227 (35%) calls asking about the film, *Nantucket!*, which was a new feature this summer that had been promoted widely through advertising and word of mouth.

Figure 6: Phone Log Responses



Activity Station

A brief oral questionnaire was issued to random visitors at the Activity Station of a special A-Z exhibit in the Peter Foulger gallery on the second floor of the museum. It was a three question survey with the aim of determining the quality of the visitor experience at the station. Question 1 asked, "How would you describe your visit today to a friend?" and Question 2 asked, "What will you remember most about your visit?" Unfortunately, responses from these questions provided few useable responses, since they were too vague and varied for staff to take any action on. Question 3B asked "Is there anything we can do better?" One hundred respondents answered the first question, but response rates fell off with each succeeding question and only 6 (6%) of respondents answered the last question. The six respondents gave five different suggestions, but the sample size is so small that the data are virtually meaningless. We suggest eliminating this survey from the museum's repertoire and replacing it with a general museum programs survey that is self-administered like a typical comment card (see Appendix C).

Walking Tour Survey

Comment cards were given out to visitors at the end of both the Historic Houses walking tour and the Downtown walking tour. In both cases, the order and wording of the questions were the same. Question 1 asked "If you described your visit today to a friend, what would you say about it?" This question was open ended and visitors recorded their responses on comment cards. Figures 7 and 8 indicate that visitors gave a wide range of responses about what they would tell their friends about their visit. For the Downtown walking tour (Figure 7), ninety nine percent of of these responses were positive in nature. Of the 473 responses for the Downtown walking tour, shown in Figure 8, 321 (68%) respondents stated that they thought the walking tour was educational, informative, interesting or delivered extensive information. Of the 515 responses from the Historic Houses walking tour, 200 (39%) of visitors responded that the walking tour was educational, informative, interesting or extensive in knowledge.

Figure 7: Responses to Downtown Walking Tour Survey Question "If you described your visit to a friend, what would you say about it?"

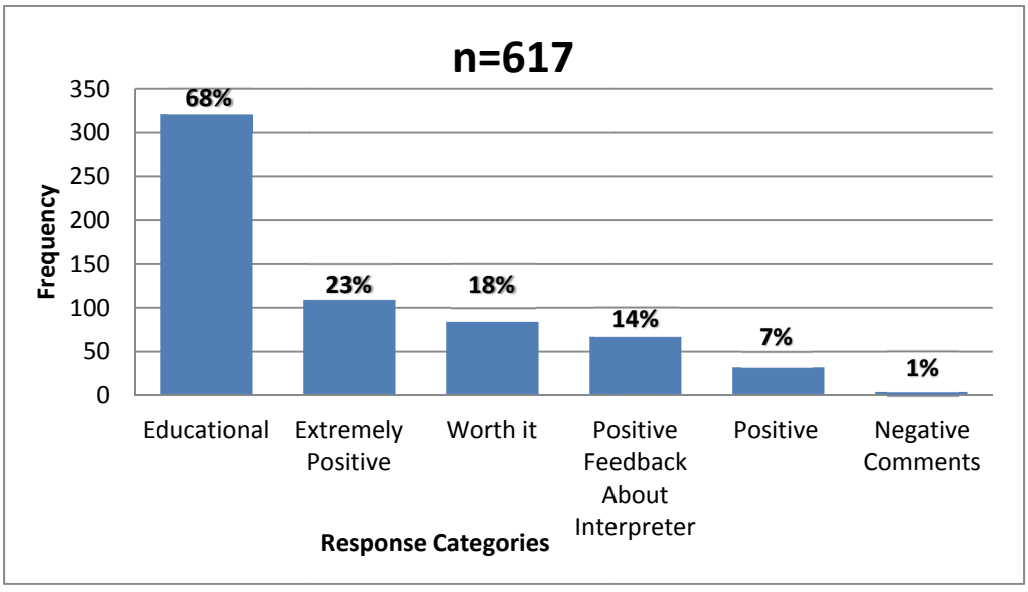
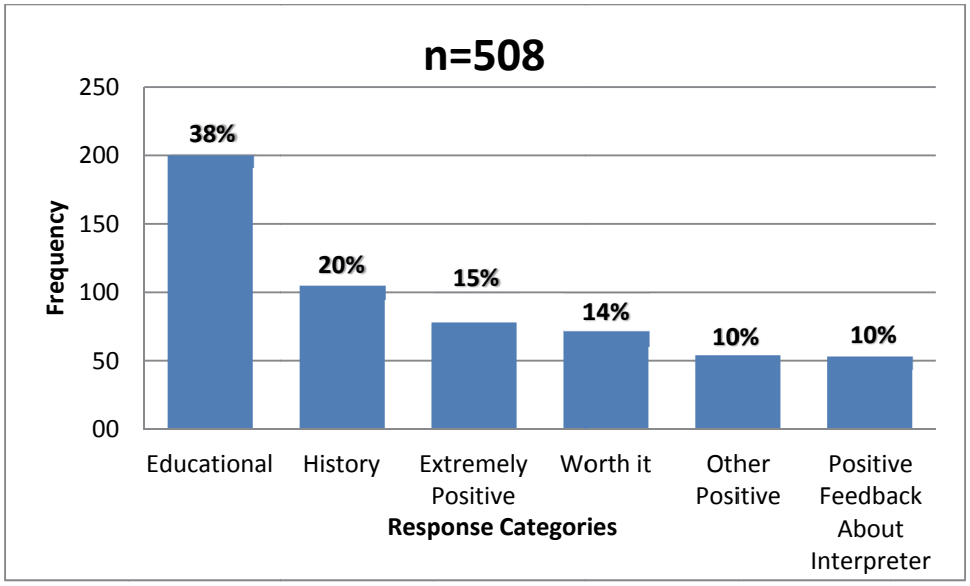
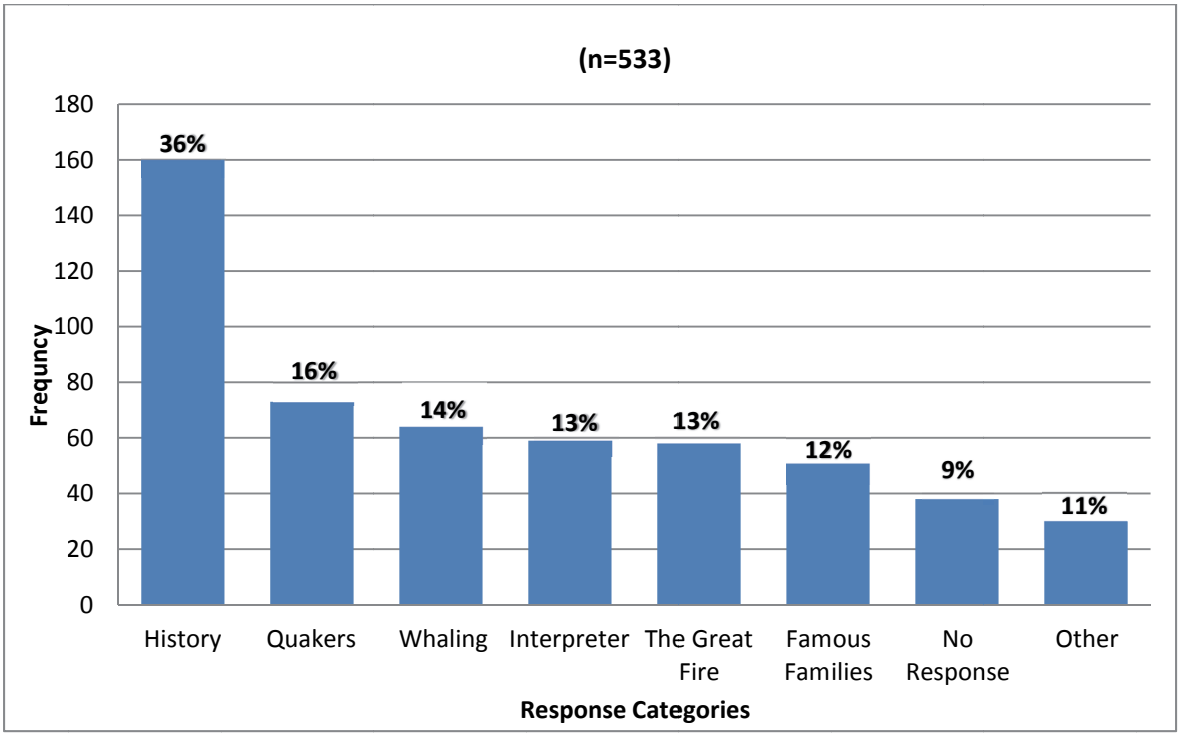


Figure 8: Responses from Historic Walking Tour Survey Question "If you described your visit to a friend, what would you say about it?"



Question 2 asked visitors "What will you remember most about today's walking tour?" In Figure 9, the wide array of responses from the Downtown walking tour are shown. Of the respondents from the Downtown walking tour, 160 (36%) remarked that the main thing they would remember from the walking tour was the historical information presented to them. One hundred and twenty five (20%) of the respondents, which compose the 'non-response' and 'other' categories, are vague about what they will take away, while the remaining four hundred and eight respondents identified particular elements that were powerful to them including items such as 'whaling,' 'the Great Fire,' and so forth.

Figure 9: Responses from Downtown Walking Tour Survey Question "What will you remember most about today's walking tour?"



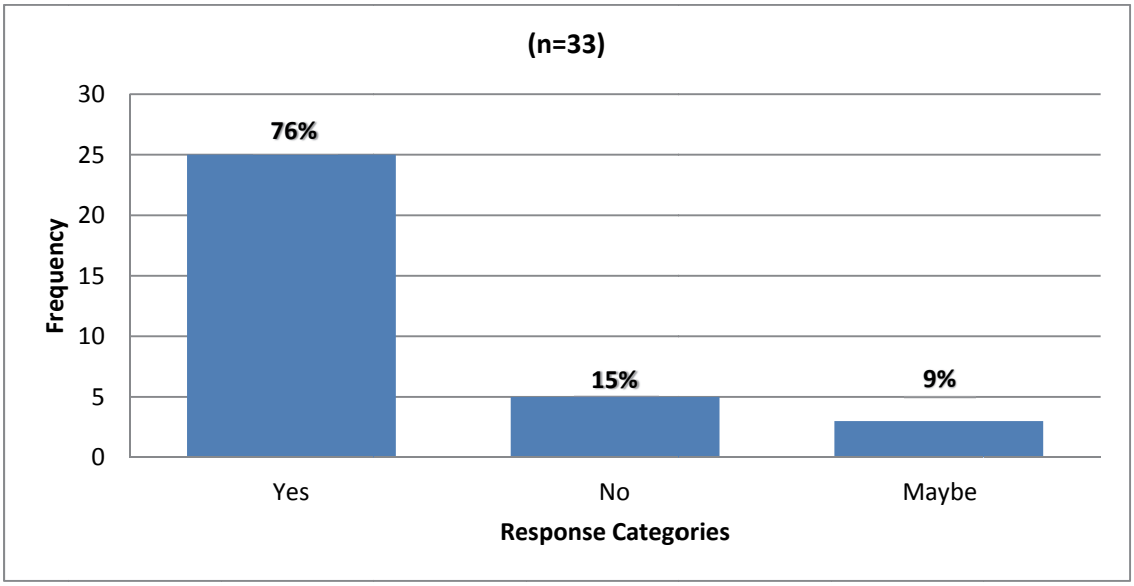
Question 4 asked visitors "What was your key factor of motivation for taking the walking tour today." The three most common responses, totalling 296 (80%) of respondents on the Historic Houses Walking tour survey, involved history, education and historical houses/landmarks of Nantucket. Three hundred and sixty eight (78%) of the respondents said that history was their main motivation for taking the Downtown walking tour. Overall, the general trend is that the walking tours attract people who were looking to learn more information and history about the island and who enjoyed hearing about the historical significance of Nantucket.

Visitor Satisfaction Survey

A seventeen question survey was administered on the floor of the museum in different locations over the course of the summer to try and gauge levels of visitor satisfactions in the museum. Unfortunately, due to the lack of staff available to create and administer the survey only 41 visitors took at least part of the survey. As seen below in Figure 10, Question 12 asked if visitors thought they would return for another visit. Excluding the 8 visitors who did not answer this question, 76% of the 33 respondents said

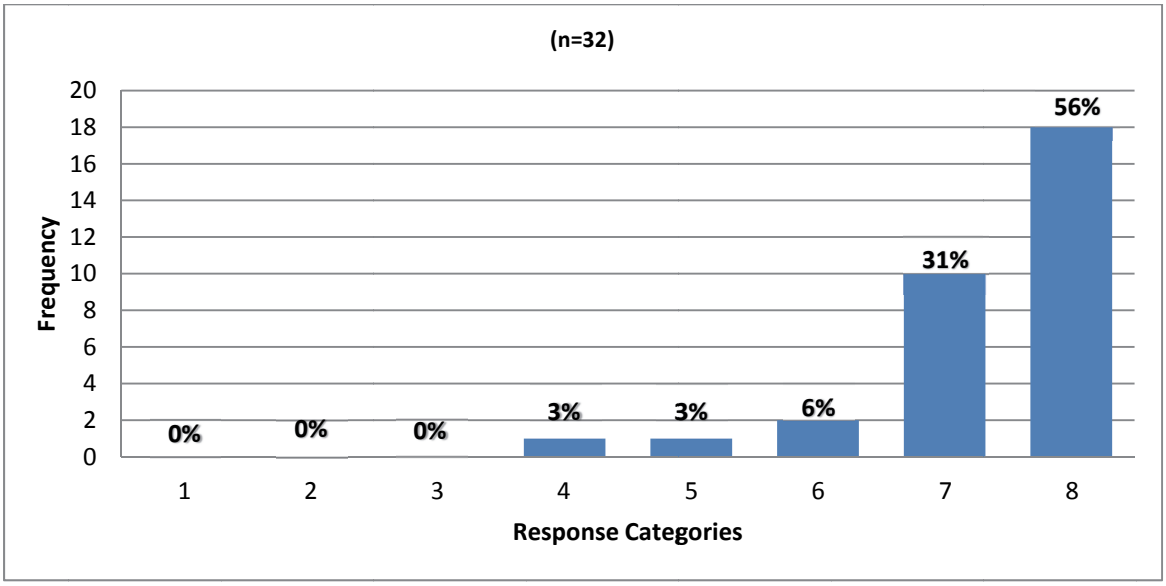
they would return. An additional 3 (9%) respondents answered 'maybe' which was not a target response, but could be interpreted as a 'yes I think I will return for another visit' bringing the total positive responses to 28/33 (85%). This data is encouraging for the NHA, but behavioral intent expressed in surveys does not necessarily materialize in reality.

Figure 10: Responses from the Visitor Satisfaction Survey Question "Do you think you will return for another visit?" Excluding Non-Response



When asked, "How would you rate your overall experience during your visit to the whaling museum today?" 56% of respondents ranked their visit as 8 out of 8 excepting the 9 non responses (Figure 11). Ninety three percent of the respondents rated their overall experience as 6 or above on an 8-point scale, and none rated it below 4.

Figure 11: Responses to Visitor Satisfaction Survey Question "How would you rate your overall experience during your visit to the whaling museum today?"



Question 6A asked, "Was watching the film the primary reason for your visit today?" Although we have determined with the staff that this question should not have been on this survey, since it is about a specific museum program, it produced some interesting data along with question 7, "Did you watch the film, Nantucket, during your visit today?" Excepting non responses from both questions, 32% of the visitors said that the film was the primary reason for their visit, while 64% of visitors said they watched the film. This shows that the museum does a good job of advertising the film inside of the museum and that the film, *Nantucket!*, is an attractive activity offered by the NHA.

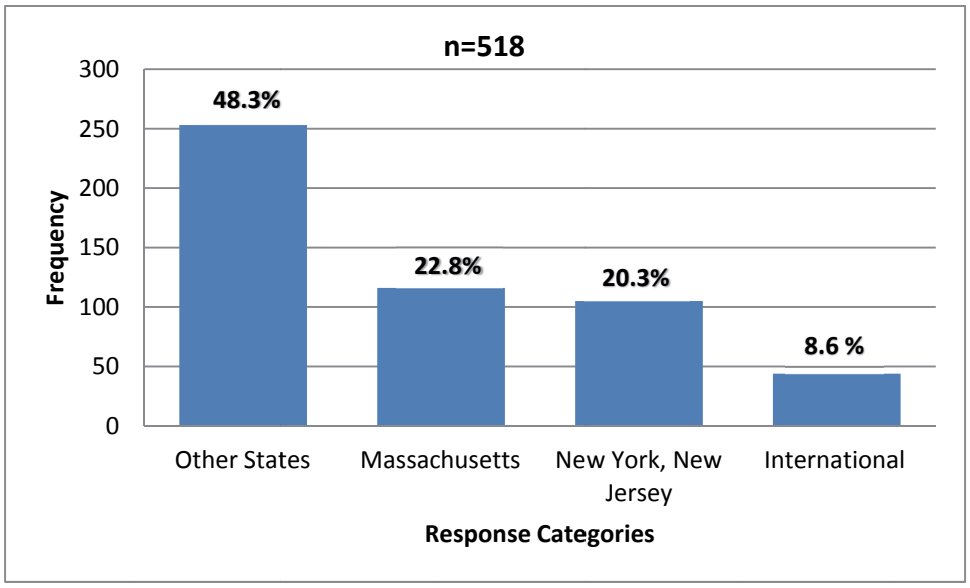
The last major item of interest pulled from the visitor satisfaction surveys were the reasons people gave for refusing to participate. Two stood out the most past the typical 'my family is pulling me away' or 'I was just leaving'. People turned the survey down because they had taken another one already or because it looked very long. These are two issues that the team addressed with new surveying instruments, as discussed below.

Summer 2011 Zip Codes

In a push to gather better marketing and demographic data on the visitors, 518 visitor zip codes were collected over the summer season. The zip code data revealed three

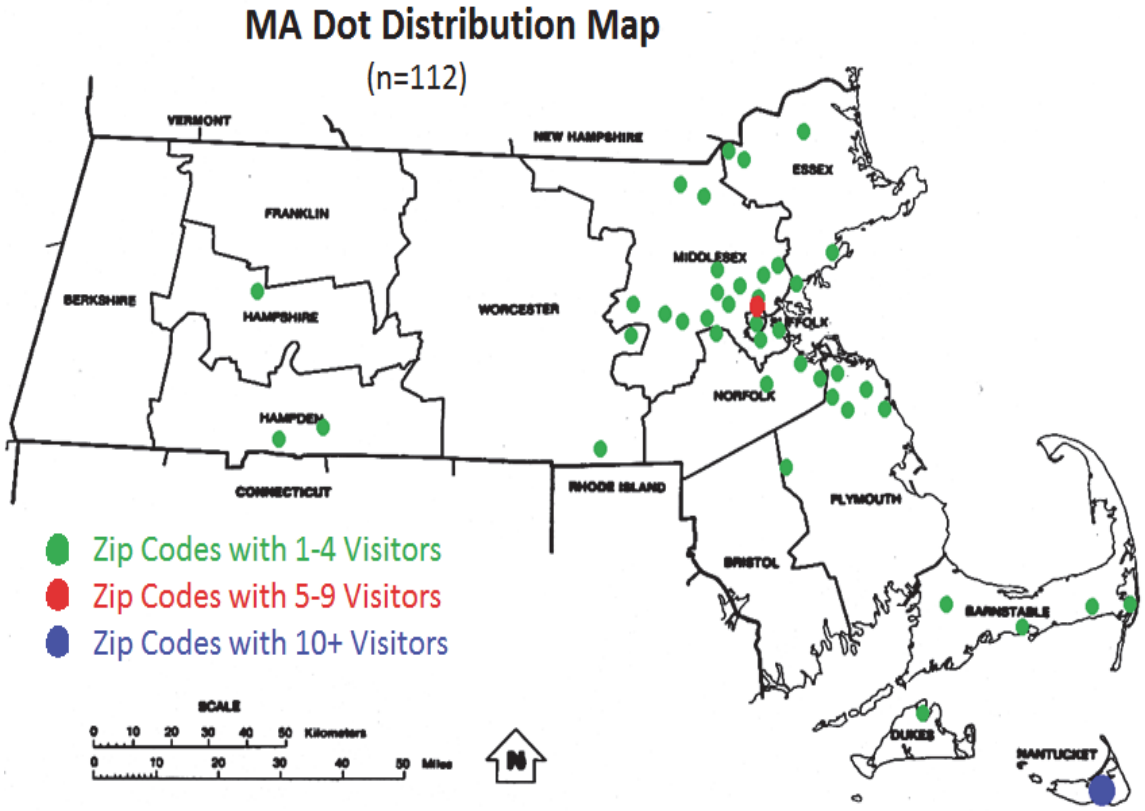
significant geographic clusters among NHA visitors: 22.8% of respondents were from Massachusetts, 20.3% from New York and New Jersey, and 8.6% were from outside of the United States.

Figure 12: Summer 2011 Zip Code Graph



Of the 518 zip codes recorded over the summer 2011 museum season, 112 visitors (22.8%) listed their zip code in Massachusetts. With the museum being in the state it is expected that a sizeable portion of visitors are coming from within Massachusetts. This dot distribution map of the state, see Figure 13, shows zip codes with multiple respondents. Nantucket was the only single zip code with over 10 respondents and the combination of Boston zip codes was the only other location with over 5 respondents. This map shows that a large proportion of visitors probably comes from the Boston and Metro-West areas of Massachusetts.

Figure 13: Massachusetts Dot Distribution Map



Modified Survey Instruments

The survey instruments (Appendix C) were developed by the project team along with input from NHA staff members based on results from the surveys conducted over the summer 2011 season and additional research by the team and staff. The goal was to modify the existing walking tour surveys and visitor satisfaction survey instruments and protocols to enhance response and completion rates to ensure that the surveys gathered pertinent, useable, high quality data. This was done by rephrasing some of the questions and replacing others that did not provide useful data or appeared to confuse visitors. Twenty percent of the questions from both the Historic walking tour and Downtown walking tour surveys and 42.5% of the questions from the visitor satisfaction survey had 'non-response' as the highest 'response' to a question. Along with that, 52.5% of the remaining questions had more than 20% non-response rates, which means at least 8 of the 41 respondents did not answer. Since only 41 people took the visitor satisfaction survey it reduces the power and validity of the data. The length and appearance of the instruments were also modified to enhance response rates. The visitor satisfaction survey, as noted

above, was turned down multiple times due to its length and that it looked like a medical form instead of a welcoming, quick questionnaire. We created a much shorter survey that was confined to a single page. We used larger type and more 'white space' to make it appear shorter, less burdensome, and more welcoming. Also the survey was split into two versions, with three to four different questions in the body of each surrounded by a few demographic questions that are the same on both, so that only 7-8 questions were asked each time as opposed to the 17 on the prior version. These survey instruments can be seen in Figures 14 and 15 below.

We held meetings with department heads to collaborate on updating survey instruments. In these meetings we discussed what each department wanted to know, needed to know and what was usable data from prior instruments. Each department identified questions on the original visitor satisfaction survey that were necessary and that they felt could be removed. The team compared this information along with the prototype made by the team after we completed data analysis. This information was then compiled into a new instrument, which was sent back to the heads and re-evaluated. The team created other survey instruments, as seen in Appendix C, based on questions the staff felt were important but did not belong on the visitor satisfaction survey. The team created a self-administered general museum program or activity questionnaire and an online survey which can be used as a follow up evaluation. The use of Likert scales, multiple choice, and ranking questions make these instruments user friendly. The goal of these new instruments is to get a higher overall and individual response rate. Additionally the online instrument can be used for member contact and front-end research.

Figure 14: Modified Visitor Satisfaction Survey Version 1

1. Are you a member of the NHA? (Yes / No)

2. What is the zip code of your primary residence? _____

If they are from out of town, how long are you staying?

1 day **2 – 6 days** **1 – 2 weeks** **2+ weeks**

3. Is this your first visit to the Whaling Museum? (Yes / No)

4. How did you hear about the Whaling Museum? _____

5. How often do you attend museums:

Once a Year 2-3 times per year 4-5 times per year >5 times per year

6. Why did you decide to come to the Whaling Museum today?_____

7. With 1 being "not satisfying at all" and 5 being "very satisfying" how would you rate your overall experience with the Whaling Museum today?

Not Satisfying at all 1 2 3 4 5 Very Satisfying

11. Now I just have a few demographic questions.

***How old are you?** (get #)____ * **Gender:** (M / F) ***Group:** Alone Adult & Kids Adult Grou

***What is the highest education level you have completed?** _____

***What would you consider your ethnicity to be?** _____

Thank you for visiting us today and taking time to reflect on your visit! If you leave your email address, we will add you to our e-newsletter, which provides an up to date calendar of events and special programs at the Whaling Museum.

Email Address: _____

Have a great day!

*Date/Time of Interview*_____ *Interview Number*____ *Interviewer Initials*_____

Refusal Reason?

Figure 15: Modified Visitor Satisfaction Survey Version 2

1. Are you a member of the NHA? (Yes / No)

2. What is the zip code of your primary residence? _____

If they are from out of town, how long are you staying?

1 day **2 – 6 days** **1 – 2 weeks** **2+ weeks**

7. With 1 being "not satisfying at all" and 5 being "very satisfying" how would you rate your overall experience with the Whaling Museum today?

Not Satisfying at all 1 2 3 4 5 Very Satisfying

8. What will you remember most about your visit today? _____

9. How can we make your visit better? _____

10. Would you return to the whaling museum? (Yes / No)

If yes, Members Interesting/Educational New Exhibit If Back on the Island Other: _____

If no, can you give us a reason why?_____

11. Now I just have a few demographic questions.

***How old are you?** (get #)____ * **Gender:** (M / F) ***Group:** Alone Adult & Kids Adult Group

***What is the highest education level you have completed?** _____

***What would you consider your ethnicity to be?** _____

Thank you for visiting us today and taking time to reflect on your visit! If you leave your email address, we will add you to our e-newsletter, which provides an up to date calendar of events and special programs at the Whaling Museum.

Email Address: _____

Have a great day!

*Date/Time of Interview*_____ *Interview Number*____ *Interviewer Initials*_____

Refusal Reason?

Conclusions and Recommendations

Evaluations are a developing concept in museums, but one that has a growing importance in providing an excellent visitor experience. Evaluations affect each department of a museum, making it important that the entire staff have the same idea of the importance of carrying them out. Evaluations can be used to improve visitor experience in general (facilities, exhibits, and programs), enhance marketing and outreach potentials, and the help to obtain funding from grants or other donors. Currently the NHA is only just beginning to conduct evaluations and needs to do more to strengthen these areas. The staff also needs to be brought on board regarding the purpose and value of evaluation and trained in it techniques so everyone can aid in improving the museum.

The overarching goal of this project was to help the Nantucket Historical Association assess and enhance the way the museum conducts its visitor evaluation. In order to accomplish this, the project team first coded and analyzed all of the data collected by the NHA over the summer museum season including phone logs, visitor satisfaction surveys, walking tour surveys an activity station survey, and zip code data. The two walking tour surveys produced information about the success of the NHA as a place of informal learning on the island. Generally, museum visitors appear to be satisfied with their experiences in the museum, with 56% of visitors being 'very satisfied' and 93% ranking their satisfaction 6 or above on the scale of 1-8 with 8 being very satisfied and the average ranking being a 7.34. 76% of participants in this survey also answered that they think they would return to the museum with another 9% responding maybe. These numbers show that visitors are enjoying their time at the museum and even though almost 80% of the visitors who participated in the surveying came from out of state, let alone off island, people want to come back due to the quality of the experience. Zip code analysis revealed that the museum has a broad geographic draw. In the sample of 518 zip codes collected over the summer, almost every state appeared at least once and 44 (8.6%) respondents came from out of the country. Twenty two percent of respondents came from Massachusetts and 20.3% from New York and New Jersey.

From these observations and based on our analysis of the visitor survey data, the team was able to identify several areas where survey instruments and data collection protocols could be improved. By working with the staff the team was able to create modified and in some cases new survey instruments for use in future visitor evaluation activities, as well as templates for coding and analyzing the data collected. Since the NHA is a small museum, the staff does not have the time or resources that larger museums might devote to visitor evaluation. Nevertheless, visitor evaluation will play an increasingly important role in the future development of exhibits and programs at the museum. The team hopes that the ideas, materials, and recommendations presented here will allow the NHA staff to focus more on implementation than preparation work for their next visitor evaluation efforts.

Based on the data and our observations we were able to draw a variety of conclusions:

- From the data it appears that the museum is doing a good job meeting visitor's needs and expectations. Ninety three percent of the respondents rated their overall experience as 6 or above on an 8-point scale (where 8 equaled 'extremely satisfied') to yield an average score of 7.34 overall.

- There is an inevitable tension between the needs of different staff and how they can be met through visitor evaluation (e.g., curators/interpreters vs. marketing). This was seen during interviews with each department about what they wanted to include in the surveys and learn from evaluations. Each visitor survey instrument will need to be designed to balance these different needs, and we have developed some model instruments that try to do this. It may be necessary in the future to develop other instruments with varying emphases on curatorial and programmatic needs versus marketing. In designing these surveys, staff should avoid the temptation to include more and more questions, since the survey instruments will 'balloon' and the response rates and quality of information will decline.

- Staff need more training in the development and delivery of surveys and the collection of additional data (e.g., zip codes, etc. at the point of sale). This ranges

from simple things such as writing legibly on surveys to more complex things like survey administration and data coding and analysis. Training more staff on appropriate surveying techniques will have a variety of benefits. It will improve the quality and quantity of data that can be collected and reinforce the sense among staff that visitor evaluation is important. Greater involvement of staff in evaluation may also encourage different kinds of interactions between staff and visitors and thus encourage a more reflective assessment of what the museum does and how it does it.

- The NHA's survey instruments and protocols need improving. The team put a lot of focus into working with staff to improve these evaluation tools. We are confident that the NHA now has a good framework to move forward with and instruments that will obtain useful, higher quality data.

- The more that data entry and analysis can be streamlined, the better able the staff will be able to administer and analyze evaluation surveys. The team learned this from coding the data from the past evaluations, which were in multiple formats and difficult to compare. The team created a coding sheet for them to follow that will work with all future evaluations and keep the data organized and in similar states for easy analysis.

- Technology from the point of sale to hand-held devices offers major opportunities for improved evaluation and ongoing collection of data necessary for marketing. The NHA staff appears eager to weave technology into their surveying and data collection instruments. Implementing improved software at the point of sale would allow the NHA to gather membership, zip code, and email data more easily and thus improve the quantity, quality, and consistency of the data collected. Also, implementing handhelds for surveying would allow the NHA to save time coding and analyzing their data sets and potentially collect more information on the floor.

- Failure to collect basic information such as zip codes and basic demographic data is a severe limitation that needs to be addressed for future marketing and funding

opportunities. These were seen through small data sets and uncompleted observational demographic questions on surveys. Luckily, these problems can be fixed if proper training is given to all staff and more effort is put into data collection.

Recommendations

Based on the results of the coding and analysis conducted by the project team, in accordance with the research conducted over the last semester, the following recommendations have been presented to the staff at the NHA:

Overall Recommendations:

- **Do not lose focus on the strengths of the museum.**

  The four tenets of the Whaling Museum are to design and deliver engaging programs, manage its collections and properties, serve diverse audiences, and secure financial resources to support its mission. Based on staff interactions, the team can say that every NHA staff member works to meet these objectives of the NHA's mission. A continued dedication to the roots of the organization will allow the NHA to continue to produce a product that people will want to buy. The excitement to share the history of the island, the ability to work so well as a team, and the desire to go above and beyond in every aspect of the museum all add up to a recipe for success which the NHA should keep its sights on.

- **Continue to conduct evaluations in the museum.**

  The NHA needs to continue to conduct evaluations and conduct a more expansive set of them in order to enhance visitor experience by improving exhibits, facilities, and programs, improve marketing and outreach, and help the museum to garner funding from grants. The valuable data that can be collected from well implemented evaluation plans will allow the NHA to improve in all of these areas which involve all of the staff. By properly training and making their staff aware of evaluations, each department can learn from the visitors and improve its outputs.

- **Provide proper training for staff in the area of evaluations.**

  Staff should be trained on all aspects of the museum's evaluation process in order to improve the quality and quantity of the data that can be collected and reinforce the sense among staff that visitor evaluation is important.

- **Continue creating and modifying survey instruments.**

  The NHA needs to create tailored survey instruments that always try to balance marketing needs with curatorial and programmatic needs, though inevitably will want some instruments with a heavier emphasis on one or the other depending on the point of the particular survey and needs of the museum at the time.

Technology Recommendations:

- **Using online survey generators for survey delivery.**

  Taking advantage of programs like Survey Monkey© to generate digital surveys that can be customized to meet staff needs can save a lot of time and paper. Staff can create the surveys online as they would by hand and then implement them on handheld devices in the museum or use them for email surveying. Online programs, such as Survey Monkey©, provide instant coding and basic analysis which saves the time of a staff member having to code by hand. The small fee sometimes associated with such online services could be well worth it in terms of the amount of staff time it saves.

- **Utilizing handheld devices such as iPads© for portable surveying.**

  The use of handhelds to survey visitors in museums is a relatively recent approach. Staff could either setup these devices around the museum with interactive, self-administered surveys for visitors or use them in place of paper surveys during administration to visitors. Again, this technology would allow for instant coding and data collection as everything would be input into a digital program ready to take the responses. This type of surveying can be much more interactive with visitors and allow them to become involved with the survey, possibly enjoying them. The downside to this type of technology is that it may scare some visitors away who have not embraced some of the modern

technologies. Something the museum would need to do before investing in this type of technology would be to determine if visitors would rather this type of evaluation over the traditional paper form. A good way to do this would be to test a few by setting up a prop with a simple survey on it or having a staff member use something like an iPad© to administer a survey.

- **Utilize point of sale software to collect zip codes.**

  The collection of zip codes, email addresses and membership information are all very important pieces of data for the NHA. We discussed multiple ways for staff to collect more data in these areas and have a few suggestions. First questions about membership have been added to a few of our survey instruments, however this will not tell the NHA how many times this member has been to the museum, etc. Also the zip code of the visitor's primary residence and their email address are prompted for at the end of each instrument with a thank you and explanation for why they are being collected. Being on the shorter surveys the team is confident response rates will increase in these areas.

  The NHA is looking into a new point of sale software that will prompt visitors for zip code information, emails, and record if they are a member or not and each time a member attends the museum. This way the data is collected upon entrance of the museum and becomes a fluid system for data collection. Most visitors are used to supplying this kind of information and with email address being an optional part of the system, potentially with an incentive involved, it should not make visitors feel intruded upon. A potential issue to this is longer wait times for visitors buying tickets to the museum especially in the busy summer season, however only asking every 3rd, 5th, etc. visitors could solve this issue.

Front-End Evaluation Recommendations:

- **Utilize a front-end evaluation plan for future exhibits, programs or activities.**

  Per request of the staff the project team created an outline for implementing a front-end evaluation procedure for future exhibits, programs or activities. This is something the NHA does not officially use in the

implementation of their new museum pieces and would like to start following. The team researched the area of evaluation, which occurs in the planning stages of a new exhibit, program, or activity to determine if changes should be made so it will succeed. The team setup this protocol, see Appendix F, which should allow new museum entities to be created and evaluated before they are put on the floor and changes cannot be made as easily. Examples of our strategy include meetings with the department heads or board to attempt to bring out problems beforehand, focus groups and visitor surveying to learn what is known on the subject and what content would be interesting to visitors, and using prototypes to see how visitors will take to the new setup. Using this guideline as a tool to stay on track and make sure every potential problem is addressed should help the NHA continue to put out exhibits, programs and activities.

Data Collection Recommendations:

- **Make sure those who collect data write clearly and legibly.**
  The team encountered many instances where data was not easily read. We recommend that anyone who collects data write as clearly and as legibly as possible. This will help those entering and coding the data and save many follow up questions regarding what is actually written.
- **Use premade templates for inputting data into Excel©.**
  The team recommends the use of premade excel templates for data entry onto the computer. These spreadsheets have been formulated to take all data input and separate out by question the frequency of each coded response. This significantly cuts down on time coding and analyzing data. The team created a template that can be used for the next and future rounds of data collection (see Appendix D).

Survey Instrument Recommendations:

- **Instead of a question that asks "did we meet your expectations?", use a Likert scale to better gauge satisfaction.**
  Based on our analysis, we recommend that the NHA replace open ended questions, such as 'did we meet your expectations' with Likert scale responses. The reason for this change is due to answers being too vague: yes or no. A

question with a Likert scale would be a more helpful question which would give the NHA an idea of how satisfied visitors are on average and what the range of their satisfaction is. If the average for a tour were 6.2 out of 8, that shows that there is still room for improvement, but that visitors are satisfied. A comment section could still be used under these types of questions to capture any positive or negative feedback.

- **Shorter survey instruments get a better response rate- keep surveys below 10 questions.**

  The team recommends that all survey instruments are kept as brief as possible. Visitors are less likely to take a long survey and are even less likely to finish a survey if it is more than 10 questions. We have chosen to limit comment cards to half of a 8 ½" X 11" page and the more formal visitor satisfaction to less than 8 questions being asked at a time.

- **Do not have the similar questions in the same survey.**

  There were a few instances of questions appearing in the same survey that was very similar or asking for similar responses. These not only may confuse or put off a visitor, but take up space on the survey and time that the visitor may not be willing to give up. This can be prevented by carefully looking over finalized instruments and using pilot tests to make sure each question asked produces the kind of data the museum is looking for.

- **Utilize a schedule of when to use specific surveys as to avoid multiple surveys per visit.**

  Many visitors were refusing to take the visitor satisfaction survey because they had already been approached to take a survey before in the museum. This is an issue that will appear more frequently in the NHA since it is a smaller museum. The project team, in accordance with their sponsors recommend implementing a schedule that administers certain surveys on certain days as to not over survey visitors. An example of this can be seen in Appendix E.

- **Consider offering an incentive for participation in surveys.**

  We recommend that the NHA consider offering an incentive like a discount to the gift shop or a raffle ticket for a chance to win a prize in exchange

for the visitor taking the survey. We believe the incentive will boost response rates and attract visitors to take the survey. This could also be done for email address collection and was recommended by the American Association of Museums.

Supplemental Material Recommendations:

- **Produce surveys and other materials in a more economical fashion.**

  This recommendation comes from information presented to the team about the time and money spent creating hard copies of surveys which sometimes were wasted. Once survey instruments are finalized, mass printing them either in house or at a more cost effective venue would be a recommendation made by the team. Additionally choosing a number to print can be used as a goal of how many the staff would like to administer over a period, with additional copies made as backups, etc.

- **Provide a map with key locations and other pertinent museum and tour information.**

  A way for the museum to make some additional money and keep its visitors more informed would be to offer maps of historic sites on the island along with brief descriptions of each location for sale at the Whaling Museum and at the start of each walking tour. From our analysis it was apparent that visitors wanted these to use as supplemental guides during tours and to remember where they went after the tour. These could be made up in brochure fashion and would be informative pieces to offer visitors that show off the NHA's collection of properties, about which some visitors are unaware.

- **Create a supplemental reading list for more information about tour topics. Have supplemental reading materials available at the end of the tour or at the NHA gift shop.**

  Based on feedback from walking tour surveys, the team noted that multiple visitors wanted a list of supplemental readings having to do with the historic houses, island, NHA, etc. The works could be sold in the museum shop or

even at the end of the tours, but a printed list could be handed out along with surveys which may even spark visitors to take them.

On top of the great work already being done by the staff at the NHA, the team feels that effort in these areas will allow them to gather even more data and ultimately provide visitors with an even better visitor experience in the future.

References:

Adams, R., & Nichols, S. K. (1999). Visitor Surveys: A User's Manual. Washington, DC: American Association of Museums.

Alexander, E. P., & Alexander, M. (2008). Museums in Motion: An Introduction to the History and Functions of Museums. Lanham, MD: Rowman and Littlefield Publishers, Inc.

Bailey, E., Bronnenkant, K., Kelley, J., & Hein, G. E. (1998). Visitor Behavior at a Constructivist Exhibition: Evaluating Investigate!! at Boston's Museum of Science. Committee for Education and Cultural Action. Retrieved from http://www.mos.org/exhibitdevelopment/pdf/InvestigateEvaluation.pdf.

Berry, H., Farber, E., Goldspiel, E., & McAlpine, A. (2005). Museums: Yesterday, Today, and Tomorrow. Aviso, 31. Retrieved from http://www.aam-us.org/pubs/aviso_archive/upload/AvisoSept05.pdf.

Bickersteth, J., & Ainsley, C. (2011). *Mobile Phones and Visitor Tracking*. Retrieved from http://conference.archimuse.com/mw2011/papers/mobile_phones_and_visitor_tracking.

Bitgood, S., & Shettel, H. (1994). The Classification of Exhibit Evaluation: A Rationale for Remedial Evaluation. In M. Borun & R. Korn (4th), Introduction to Museum Evaluation (pp. 69-76). Washington, DC: American Association of Museums.

Borun, M. (1991). Front-End Evaluation: A Tool for Exhibit and Program Planning. In M. Borun & R. Korn (4th), Introduction to Museum Evaluation (pp. 43-57). Washington, DC: American Association of Museums.

Borun, M., & Korn, R. (1999). Introduction to Museum Evaluation. Washington, DC: American Association of Museums.

Boston Museum of Science: Current Exhibits. (2011). Retrieved 09/25, 2011, from http://www.mos.org/exhibits_shows/current_exhibits.

Case Study. (2011). Retrieved from http://www.checkbox.com/about/case-studies/museum-of-science/.

The Cleveland Museum of Art Tracking Visitor Satisfaction with SPSS Predictive Analytics Software. (2009, April 22). Retrieved from http://www.businesswire.com/news/home/20090422005148/en/Cleveland-Museum-Art-Tracking-Visitor-Satisfaction-SPSS.

Diamond, J., Luke, J., & Uttal D. (2009). Practical Evaluation Guide*: Tool for Museums and Other Informal Educational Settings*. New York: Rowman Altamira.

Exploratirum: The museum of science, art and human perception. (2011). Retrieved 10/26, 2011, from http://www.exploratorium.edu/index.php

Falk, J. H., & Dierking, L. D. (2000). Learning From Museums: Visitor Experiences and the Making of Meaning. Walnut Creek, CA: Alta Mira Press.

Falk, J. H., & Dierking, L. D. (1992). The Museum Experience. Washington, DC: Whalesback Books.

Hein, G. E. (1998). Learning in the Museum. New York, NY: Routledge.

Hein, G. & Alexander, M. (1998). In Groff A. H. (Ed.), *Museums: Places of Learning*. Washington, DC: American Association of Museums.

Humphrey, T. and Gutwill, J. (2005). *Fostering Active Prolonged Engagement: The Art of Creating APE Exhibits*. Exploratorium: San Francisco, CA.

Implementation of Standards-Based Education (2011) . Retrieved from http://doe.k12.hi.us/curriculum/GLO_rubric.htm.

Kaynar, I. (2004). Visibility, movement paths and preferences in open plan museums: An observational and descriptive study of the Ann Arbor Hands-on Museum. Retrieved from http://www.kaynar-rohloff.com/papers/kaynar_SpaceSyntax05.pdf.

Kelly, L. (2004). Evaluation, Research and Communities of Practice: Program Evaluations in Museums. New York, NY:Springer.

Korn, R. (1995). An Analysis of Differences Between Visitors at Natural History Museums and Science Centers. In G. Hein (1st), Learning in Museums (pp. 41-54). New York, NY: Routledge.

Melton, A.W. (1935). Problems of Installation in Museum Art.

In G. Hein (1st), Learning in Museums (pp. 41-54). New York, NY: Routledge

Miles, R. (1993). Grasping the Greased Pig: Evaluation of Educational Exhibits.

In G. Hein (1st), Learning in Museums (pp. 55-77). New York, NY: Routledge.

Nantucket Historical Association: Whaling Museum and Historic Sites. (2011). Retrieved 09/20, 2011, from http://www.nha.org/sites/index.html.

Rubenstein, R. (1990). The Uses of Focus Groups in Audience Research. In M. Borun & R. Korn (4th), Introduction to Museum Evaluation (pp. 47-51). Washington, DC: American Association of Museums.

Screven, C. (1993). What is Formative Evaluation?. In M. Borun & R. Korn (4th), Introduction to Museum Evaluation (pp. 59-67). Washington, DC: American Association of Museums.

Screven, C. (1976). Exhibit Evaluation- A Goal Referenced Approach. In M. Borun & R. Korn (4th), Introduction to Museum Evaluation (pp. 69-70). Washington, DC: American Association of Museums.

The Seas with Nemo & Friends Pavilion. (2011). Retrieved 09/25, 2011, from http://disneyworld.disney.go.com/parks/epcot/attractions/the-seas-with-nemo-and-friends-pavilion/.

Serrell, B. (1998). Does Cueing Visitors Significantly Increase the Amount of Time They Spend in a Museum Exhibition?. Visitor Studies Today!, 3. Retrieved from http://informalscience.org/researches/VSA-a0a6v8-a_5730.pdf.

USS Constitution Museum Team. "Family Learning Forum | Museum Exhibit Resource | Visitor Evaluation Project - Evaluation." *Family Learning Forum | Museum Exhibit Resource | Visitor Evaluation Project - Home*. 2010. Web. 04 Nov. 2011. <http://familylearningforum.org/evaluation/types-of-evaluation/timing-tracking.htm>.

The Zeppelin Museum Friedrichshafen. (2011). Retrieved 09/25, 2011, from http://www.zeppelin-museum.de/dasmuseum0.0.html.

Appendices

Appendix A: Examples of Questions Asked by the NHA

This is a summary table of a question asked by the NHA front desk over the week of August 12-18.

What made you decide to visit the museum today? (Check all that apply)

Nantucket, the film	**88 (Highest response)**
Programs (Hunt, tours, etc.)	34
New exhibit (Nantucket A to Z)	**4 (Lowest response)**
Hands-on History	14
A friend told me about it	14
Family time	12
Weather/Rainy Day	19
Other (please write in)	3 Lecture [Kelly Gleason] 1 [unspecified] Go Boston Revisit 3rd grade at school is all about whaling 1 [?] Sites/museum

This is an example of tallied information about visitors attending the museum and visitors attending the short film "*Nantucket!*" over the week of August 12-18.

Date	Total Visitors	Total Film Attendance	Total Film Attendace %
12-Aug	402	151	38%
13-Aug	323	97	30%
14-Aug	347	120	35%
15-Aug	1333	570	43%
16-Aug	639	196	31%
17-Aug	409	93	23%
18-Aug	358	147	41%

Appendix B: Interview Transcriptions

Interview with Kim McCray, Director of Interpretation and Education

Transcriptions from interview which took place on October 27th 2011:

1. **Why do you want to evaluate the NHA's visitor experience?**
   Evaluations are considered best practice in museum profession. Museums need evaluations to back up claims of learning and to help museum professionals learn about their processes and successes.

   Specifically for the NHA, evaluations are needed for education and interpretation as well as marketing.

2. **Why do you want to update or rejuvenate evaluation procedures and protocols?**
   Wants to create a balance between instinct versus theory.
   The data needs to back up the theory behind the evaluation and exhibit/program. Also want to help staff become more familiar with why and how to read/interpret data.

3. **Why did you choose certain evaluation methods for certain programs, exhibits or activities?**
   These evaluation methods were felt to be the most convenient and effective for data gathering. For example, the kind of survey the walking tour survey was had been chosen because there was such a limited amount of time in which to capture information from visitors. It needed to be convenient, easy and clear.

4. **How have you modified your approach to evaluations over time? Why?**
   Modifications were made based on course work I have done and personal growth. Institute has growth too- from 2007-2011 the NHA is very different.

5. **What changes have been made to exhibits, programs, or facilities based on the feedback from the evaluations?**
   Specific changes that were made involved the food for thought lunch lecture series. Feedback on speakers shaped the schedule for future lectures.

   There was a lack of awareness about the NHA historical sites being part of the "campus." The Film focused on some of those places and built awareness of the historic sites.

6. **How will our results help you personally or someone in your position at the NHA?**
   Museum schedule will be affected based on specific attendance numbers and daily attendance numbers. This year is the first full year of data to give a baseline for future data.

7. **How likely are you to make changes based on results? (ie. "There should be more stops on the walking tour." Or "The walking tour should last longer.")**

Somewhat likely, if data reveals big issues or room for improvement, the NHA will definitely look into solutions.

8. **Based on your experience with evaluations, do you have any recommendations for what has and has not worked?**
   Definitely include likert scales and be careful of the way you ask things. Avoid bias at all costs, which refers back to being careful about the way you ask things. Also, provide open ended questions, but control them: too open ended can provide too vague information that will not be helpful.

9. **What would you ultimately like to see at the end of this project?**
   All data to be analyzed and coded and to have some clear conclusions about how we are doing in evaluations, as well as conclusions and recommendations for improving the evaluation process.

10. **Is there anything else you want to tell us about your expectations or concerns for the project?**
    N/A

Interview with Marjan Shirzad, Director of Outreach and Special Programs

Transcriptions from interview which took place on November 14th 2011:

1. **Why do you, personally, want to evaluate the NHA's visitor experience?**

- To create an advertising budget that is spent in the right places.
- To create a socio demographic profile (age, race, etc.) or our visitors.

2. **How does the marketing department use and benefit from evaluation results?**

- Audience identification.
- Determine where the visitors coming from.
- Types of visitors (diversity).
- Creating programing the visitors are interested in.
- It all comes down to demographics.

3. **What would you ultimately like to see at the end of this project?**

- Demographic information gathered from the summer.
- Improved surveying instruments that can be used to gather useful data in the future.

4. **Can we discuss your comments/notes on the visitor satisfaction survey? (Important questions, what can be dropped, etc.)**

- Gathering of data should be regulated in terms of relevance.
- What are visitors doing within the museum?
- Effectiveness of advertising.
- A short evaluation should be done after all programs and special events.

5. **Is there anything else you want to tell us about your expectations or concerns for the project?**

- At this point we went through the survey and made changes to it with Marjan which where collaborated with the changes Claire suggested into our first draft of new survey instrument.

Interview with William Tramposch, Executive Director

Transcriptions from interview which took place on November 29th 2011:

1. **Why do you think it is important for the NHA to conduct visitor evaluations?**

- "The secret to education is respecting the learner"-Ralph Waldo Emerson.
- How can we serve the visitor and make the museum interesting.

2. **How do you see evaluation benefitting each department?**

- Each department head needs to be involved in evaluations.
- Staff will be able to tell if visitors are truly engaged and if they value the facility.
- If kept simple, each group can work together and monitor levels of success.

3. **What do you hope to learn from this past summer's evaluations?**

- Congruence between how the staff feels and how the visitors feel.
- Alignment of staff impressions and visitor ideas.

4. **What do you think will need to be evaluated in the future?**

- Everything!
- Website.
- Phone systems, which can make connections easy.

- Surprising people by doing the unexpected and providing above and beyond services that are memorable.
- Any area where the highest quality service is not being provided.

5. What would you ultimately like to see at the end of this project?

- A better awareness of evaluations that will show staff that evaluations are not as complex as most people think.
- The impressions of the visitors.
- Better sense of the visitor experience.

6. Is there anything else you want to tell us about your expectations or concerns for the project?

Appendix C: Survey Instruments

General Program or Activity Survey Instrument

General Program Comment Cards

1. **On a scale of 1 to 5 how much did you like the program/activity?**
   Very Little 1----2----3----4----5 Very Much
2. **How did you hear about the program/activity?** (circle all the apply)
   Daily Schedule Handout Staff Member Announcement Online Schedule
   Other: _____
3. **Comments/Feedback:** _____
   _____
   _____

4. **What is the zip code of your primary residence?** _____

   Thank you for your participation in this survey. If you leave your email address, we will add you to our e-newsletter, which provides an up to date calendar of events and special programs at the Whaling Museum.

   Email Address: _____

Online or Email Survey Instrument

Online Post Visit Survey

1. Are you a member? (Yes / No)

2. With 1 being "not satisfying at all" and 5 being "very satisfying" how would you rate your overall experience with the Whaling Museum?

Not Satisfying at all 1----2----3----4----5 Very Satisfying

4. How much time did you spend at the Whaling Museum during your visit?

1 hr 2 hrs 3 hrs 4+ hours

5. What would have made your experience better? _____

6. Will you return to the whaling museum? (Yes / No)

If yes, Members Interesting/Educational New Exhibit

If Back on the Island Other:

If no, can you give us a reason why? _____

7. What is the zip code of your primary residence? _____

Thank you for taking our survey!

Have a great day!

Activity Station Survey Instrument

Artifact Station Evaluation

Thank you for taking the time to complete this survey, your feedback will help us improve the Discovery Artifact Station program.

Please rate your experience below:

	Extremely Satisfied	Very Satisfied	Somewhat Satisfied	Not Very Satisfied	Not At All Satisfied	Does Not Apply
Interpreter was knowledgeable about the objects at the station	5	4	3	2	1	0
Opportunity to handle and learn about objects	5	4	3	2	1	0
Content was interesting and engaging	5	4	3	2	1	0
Overall station experience	5	4	3	2	1	0

Comments/Feedback

_____

_____

_____

What is the zip code of your primary residence? _____

Thank you for your participation in this survey. If you leave your email address, we will add you to our e-newsletter, which provides an up to date calendar of events and special programs at the Whaling Museum.

Email Address: _____

Walking Tour Survey Instrument

1. **With 1 being "not satisfying at all" and 5 being "very satisfying" how would you rate your overall experience with the Walking Tour today?**

Not Satisfying At All 1----2----3----4----5 **Very Satisfying**

2. **Why did you decide to take the Walking Tour today?**

   _____

   _____

   What did you like best about your tour today?

   _____

   _____

3. **With 1 being "Unsatisfactory" and 5 being "Excellent" how would you rate your overall experience with the interpreter today?**

   Unsatisfactory 1----2----3----4----5 **Excellent**

4. **How can we make your visit better?**

   _____

5. **What is the zip code of your primary residence? _____**

   Thank you for your participation in this survey. If you leave your email address, we will add you to our e-newsletter, which provides an up to date calendar of events and special programs at the Whaling Museum.
   Email Address: _____

Appendix D: Coding Template

This is where coded data values can be entered into the coding sheet. The cells are linked to pages (see below) for each individual question and automatically put them into frequency tables which can be turned into graphs to view results.

Survey Coding Template

Visito	Date	Question 1	Question 2	Question 3
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Visitor	Date	Question 1
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0

Coded Value	Frequency
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0

Coded Value	Meaning/Explanation
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Appendix E: Sample Survey Schedule

These are examples of when to administer certain types of surveys so overlap does not occur. The staff will have to decide what days work best for implementing each survey based on attendance and what programs are operating on certain days, but this can be used as a guideline for spacing. Also, if visitors seem to be okay taking surveys and filling out comment cards general museum program and activity station surveys could always be left out.

Open 2 days a week

December 26-January 3	
M	T
V	A

Open 5 days a week

November 3-December 19				
R	F	SA	S	M
A	V	A	V	A

Open 7 days a week

May 12-October 30						
S	M	T	W	R	F	SA
V	W/A	V	W/A	V	W/A	V
V	W	A	V	W	A	V

Key:
V= Visitor Satisfaction Survey
A= Activity Comment Cards
W= Walking Tour Surveys

Appendix F: Front-End Recommendations

Front-End Evaluation Strategy

This is a set of recommendations that can be followed during the planning stages of a program, exhibit or activity in order to determine the success of the end product.

1st Stage:

- If an idea is needed, or a concept needs backing to confirm that it will be liked, conduct surveys through email on members or other visitors who are willing to participate, asking what they would like to see for a future exhibit/program/activity. This can be done vaguely but will provide better results if options that are feasible for the museum to actually produce are listed and can be ranked by visitors.
- Once a topic is chosen a meeting should be held with the board and department heads to discuss a clearly outlined purpose and how it will be achieved. During this, the team needs to confirm that there is value in the project and that it will contribute to the understanding of a topic that relates to the museum's goals and purpose.
- If doubts or negative feedback arise reevaluation should occur. This will save the museum time and money by fixing potential issues before anything has been created.
- After concepts are agreed upon and an idea has been chosen, additional research should be done on the topic and conceptual ideas should contain presentable substance.
- It is important to have goals laid out such as what you want the visitors to learn from the program, and work towards those goals instead of trying to create them along the way.
- Lastly the demographics of the audience needs to be determined so further steps can determine if they are actually being targeted. Example: If the audience is locals then front end surveying can be done in the museum or at local stores, etc.

If the audience is not regular visitors than advertising may need to get involved and find a way to contact these people.

2nd Stage:

- Hold a focus group (for example member breakfast) and present these ideas (show examples of collections involved, film clips, etc.) to the visitors and obtain their feedback.
- Gauge the knowledge levels of the audience and determine what would be good information to present in the exhibit so that it is informative and is at the appropriate level for the visitors to take in.
- This will also shed light on misconceptions that visitors have on the topic and allow reworking to occur to fix these if possible.
- If the new exhibit is "different" use a mock up to see how visitors react to it. (This will save time and money if it proves to fail).

3rd Stage:

- Make final adjustments to the proposed layouts, concepts, etc.
- Implement new program/exhibit/activity.

By using formative evaluation during the life of the exhibit anything that was missed can be quickly addressed for a successful run life.