

The Use of Education Collections in Natural History Museums

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Abstract

The purpose of this research project is to provide patterns and comparisons found in the utilization of an education collection within natural history museums.

Through a comparative case study, this project explores the evaluation of three education collections and the use of objects within educational programming. Each case study will examine the management and care of these collections, as well as the organization and classification of the objects. This research will also look at the uses of these objects in educational programming at three natural history museums.

A research project was conducted in order to assess the value and utilization of education collections in natural history museums according to selected museum professionals.

Key Words

Education Collection

Object Value

Collections Management

Museum Education

The Visitor Experience

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Chapter 1: Introduction and Background

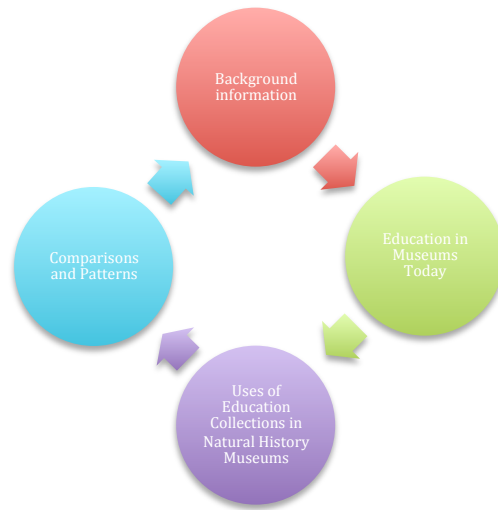
Problem Statement

Museums in the United States have grown to emphasize the use of educational theory and practice when presenting an informal learning environment, and through this process have created education departments. Education departments could further establish educational programming within museums and provide access to a wider audience. With the addition of education and access to museums, came the assortment of objects that could be used for interaction and activity. These objects can be distinguished as the education collection. Objects within the education collection are items that still represent the past and present living cultures and can be considered evidence of cultural heritage and scientific discovery.

The addition of an education department within museums has become beneficial to the general public by creating an opportunity to utilize objects that can encourage hands-on learning activities. As stated by Saumarez Smith (1988), “[Collections] should be owned and administered... by more than one person on behalf of the public, and [the collection] should be reasonably accessible to the public” (p. 8). This accessibility of the collection for the public was created by a shift in a new museology, which encouraged a closer inspection of how museums could make their collections more available to the public. Museums have to question how they will use their collections in order to promote education and research. What are museums doing today that makes them more successful in the management of objects within the collection and how have these management practices changed toward access and education? How can museums use their collections in an educational way and how can these collections be used for multiple learning capacities?

Through the use of education collections, museum visitors are able to participate in interactive activities with relevant museum objects. Education collections have the sole purpose of being used for entertainment and critical thinking for the general public that can relate to the museum's mission and goals. Museums and education collections are now programmed to create an 'awe' inspiring effect and offer a pleasurable experience to the visitors (Jordanova, 1988, p. 22). This study explains how museums are utilizing education collections and how the value of these collections is constructed. This research attempts to generate understanding of how education collections are used in programming in terms of preservation techniques, storage of the objects, number of objects, aesthetic opinions, and overall management of the collection.

Education collections can be hugely beneficial to the education department of a museum, and this study of education collections may be beneficial to some museums and museum staff. Since this study includes practices or patterns seen within the management of education collections, this study can also be relevant to museums that are in the process of developing their education collection. This study questions how museum personnel utilize objects when managing the education collection and includes information on trends or patterns when managing and caring for an education collection.

Conceptual Framework: Figure 1.

The above diagram (Figure 1) represents the conceptual framework of this research. The diagram illustrates how information is processed and obtained. The first circle designates some background information of collections, education, and object value within museums and the gradual expansion from object based research and exploration to education and access of objects through informal education within a public realm. The second circle indicates the theoretical exploration of education in museums today. This would include how museums are now primarily perceived as public institutions and how education has become an increasing important department within museums today. The third circle represents the research question for the study: how are education collections used in natural history museums? This research included the use of three natural history museums as case studies: The High Desert Museum, The Museum of Natural and Cultural History on the University of Oregon Campus, and the Denver Museum of Nature and Science. The final circle indicates the trends or patterns that were collected from this research. This includes the data collected on how museums are using their education collection in terms of preservation, storage, overall care, and use in educational programming. All of these concepts can be connected to the final research. This means that all of

these components are connected and can create a relationship based on the data collected. For example, the comparisons and patterns found in this study can relate to the background information of educational learning within museums. This includes the ideas of how education collections are used in educational programming within the museum today and how the historical background of informal education in museums may have influenced these findings.

Looking at how museums use objects in the education collection, I researched the physical wellbeing of the objects, as well as the educational component when used in programming. The point of this research is to generate an understanding of how museums value their education collections through use and management. MacFarlan and Johnson (2004) state, “Education divisions have assumed greater importance as the museum community has acknowledged its intertwined relationships with society's educational needs. And as education divisions have matured, so have museum education collections” (p. 102). There was also research done to include educational learning techniques in relation to the museum atmosphere. This would include the ways in which people learn and evaluate knowledge within a museum. However, in looking at this research, there is a connection between educational techniques and programming and the education collection. This relationship was further researched in order to evaluate whether or not the education collection is relevant when learning within the museum realm.

Theoretical Framework

The theoretical framework for this research largely comes from the notions of educational theory used within a museum. This would include how education is used in museums and how visitors are experiencing and engaging with the exhibits, collections, and programming at the museum. George Hein (2006) quotes Wittlin (1949) in stating, “The creation of the Public

Museum was an expression of spirit of enlightenment which generated enthusiasm for equality of opportunity in learning” (p. 341). In this regard, museums were distinguished as public institutions and created learning experiences for multiple people. This idea of education within museums also incorporated the objects within the collection. The main idea expressed here is that accessibility and education became an essential part of the museum experience and influenced the management practices of museum staff. These management practices included the promotion of an educational institution, which increased access and education. Using collection objects for the public and incorporating them into a wider audience, increases the overall representation of the museum and influences how the objects are cared for and preserved. In this regard, a higher construction of value, or favor, for the museum by the visitor would indicate a higher construction of value for educational programming and the use of education collections.

Research Methodology

Purpose Statement

The purpose of this study is to explore how museums are utilizing education collections and how the value of these collections is constructed. This research attempts to generate understanding of how education collections are used in terms of programming, preservation techniques, storage of the objects, number of objects, aesthetic opinions, and overall management of the collection by museum staff. The majority of this research focuses on the interpretations of museum professionals and their beliefs on how the objects in the education collections are used in natural history museums. I explore my main research question by comparing three natural history museums: the Museum of Natural and Cultural History, the High Desert Museum, and the Denver Museum of Nature and Science. The final research product includes the comparisons and patterns seen in the management and use of an education collection

in natural history museums and conclusions and implications of value of objects within the education collection.

Methodological Paradigm

I align myself with an interpretivist or social constructivist approach because I engage intimately with the museums I am studying in this research. Creswell (2003) explains that as a social constructivist, “The goal of research, then, is to rely as much as possible on the participants' views of the situation being studied” (p. 8). This means that I am conducting my study and coordinating my analysis based on the interviews with my participants. In this study, I look at the similarities and differences between natural history museum education collections and how staff members are utilizing and managing the objects for educational purposes. This paradigm influences my research by comparing and contrasting education collections in natural history museums and how museum staff are valuing the objects within the collections. My goal in using this approach is to distinguish any patterns or comparisons that are important to the overall outcome of the project. An interpretivist paradigm can encourage critical evaluation of each museum’s education collection and allow me to engage with each participant in forming an analysis on the use and management of objects within the education collection and any value that might be placed on the objects within the collection.

Research Biases

My own professional biases would include my work experience with education collections at one of the museums that took part in my research. Through a practicum course, I was able to catalogue and document items within the education collection at the University of Oregon Museum of Natural and Cultural History. Due to this interaction, I am biased toward the accumulation of a sizable collection, which can be used in educational programming and the

development of the education department within the museum. I am also partial to the idea of management and care of objects within the education collection and because of my affiliation, I am aware of the status of the education collection at the Museum of Natural and Cultural History. As a researcher, it was important to set aside these biases and concentrate on how museum staff is using their education collections within each museum. My intent is to better understand the practices used by museum professionals, specifically within the education department, in relation to the education collection.

Further potential bias can be resulted from the fact that I have spent the past few months working at the Museum of Natural and Cultural History. Because of this, there is an existing relationship between myself and the Education Coordinator and the Director of Public Programs. Furthermore, because of my relationship with these staff members, participants may respond differently than if the relationship had never existed. However, in order to address these issues, I attempt to build trust with my research participants and assure them my personal experience does not affect the overall results of my research.

Research Questions

Through looking at the use of education collections in natural history museums, the main research question I sought to answer was: *how are education collections used in natural history museums?* In order to answer this question, I also developed sub-questions that allowed me to further explore my research topic. These questions included:

1. How are items within the education collection preserved, stored, cared for, and documented?
2. How do the items become part of the education collection?

3. Is there a policy manual to follow when looking at education collection preservation?
4. How do education collections contribute to the visitor experience within the museum and how are they relevant to educational programming?
5. How is education used in the museum? Does this educational programming include the use of items within the collection?
6. How can museums use their collections in an educational way and how can these collections be portrayed for multiple learning capacities?
7. What does it mean for these objects to be valued by the museum?

Delimitations

I approached this research through the study of three natural history museums' education collections. These museums included: University of Oregon Museum of Natural and Cultural History, The High Desert Museum, and the Denver Museum of Nature and Science. I have set specific boundaries because of the comparative study that can be created between the three museums that have been selected. While an inquiry based on multiple museums across the country would be an interesting evolution of data, those museums are not the focus for this study. I wanted to include only natural history museums in this study, all of which are non-profit organizations.

Limitations

By choosing to conduct a comparative study of three natural history museums, I limited the amount of data into a narrowed focus. I excluded art museums in this research study, which could have potentially contributed to diverse research data. However, since I have a personal interest in the subject of natural history, my research has been limited to such museums. I also

limited my research to the education department, thus I did not procure information outside of this department.

Relevance

The purpose of this study is to further examine the utilization of education collections within natural history museums. Education collections may have beneficiary properties to the educational department within a museum and thus this study of education collections might be beneficial to museum professionals. Since this study includes comparisons and patterns seen within the management of education collections, this study might also be relevant to museums that are in the process of developing their education collection. This study questions how education collections are used within the education department and through educational programming and includes information on popular practices when managing and caring for an education collection.

Research Design

Research Approach

Through qualitative data, I attempted to answer my main research question as to how education collections are used in natural history museums. This is a comparative study between three natural history museums and attempts to convey comparisons and patterns seen between the three museums. According to John W. Cresswell (2014), qualitative research “is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem” (p.4). For my research, I explored the utilization and management of education collections by museum staff to document any patterns that would illustrate value towards objects within the education collection.

Strategy of Inquiry

Through my qualitative research approach, I gathered information from my three case studies: the Museum of Natural and Cultural History, the High Desert Museum, and the Denver Museum of Nature and Science. My case studies focused on the type of interaction museum staff will have with their education collections and what are the patterns or trends seen throughout each site. This comparative study is similar to the one conducted by Shane Macfarlan and Eileen Johnson. The researchers composed a study based on one site: the Lubbock Lake Landmark, a museum located in Yellowhouse Draw, Texas. This case study by Macfarlan and Johnson looks at how objects are being preserved and treated in the museum's education collection. In this article, literature and a case study of a museum education collection are used in order to further support the data collected and allow others to understand the facts of how education collections are being utilized within museums. The author also provides suggestions on how the museum should use the education collection, such as viewing the collection as unique and just as important as the permanent collection. This literature on education collections is useful in my attempt to convey how objects in the education collection are used through a qualitative approach.

Main Research Question

How are education collections used in natural history museums?

Participants

Research Population

A total of three people were involved in order to consider the uses of the education collections. These people included: an education coordinator, an education curator, and an education collection specialist. Contact information for the participants was obtained through online staff directories that are publically available.

Inclusivity and Exclusivity of Participants

The demographics of the individual participants of this study varied greatly in reference to age, ethnicity, and gender, but all participants were consenting adults. This considered age range is likely between the ages of eighteen through sixty-five. Age of the individuals only affected my research due to the amount of experience at the particular museum. There is only exclusivity based on position within the museum. The reason for this exclusivity is because of the knowledge of some museum professionals is greater compared to other individuals at each museum.

Source of Participants

I included individuals who have some knowledge of their education collection, whether that is the amount of items within the collection or the general type of items in the collection. I collected data from individuals who are aware of the status of the education collection. Some individuals were excluded from this research because of their relation to the education department or the education collection. The range of participants was centered on the relevancy to the education collection.

Participants were included in an interview and the estimated amount of time the participants spent on the interviews was no longer than one hour. The total length of the participation was about three months because of availability for interviews. The interviews were conducted through phone calls except for the Museum of Natural and Cultural History, which is located in Eugene, OR. For the interviews, participants were aware that their names would be used in the study.

General Timeline and Procedures

The general timeline of the study was determined by IRB approval. Approval was obtained on January 15th of 2016. Data was gathered between the months of January and April. The analysis of that data was conducted during these months, as well as into the month of April. The final document was written and revised in the month of April and May, so that the final version was ready for submission in early June. A more detailed explanation of the timeline can be found as appendix A.

Potential Research Risks to Participants

Risks are limited because I was not working with a vulnerable population. However, there were a few minor concerns if participating in this study. The main ethical issue with my research was information obtained from a participant consisting of the dissatisfaction of the status of the education collection within the museum. This would include any problems with the education collection or the lack of funding or care for the education collection that, according to the interviewee, needs to be changed. This knowledge may in some way become pertinent to upper management in the museum and it could potentially result in negative consequences if upper management does not wish this type of information to be publically known. Another issue was the loss of work time due to participation in an interview. However, I asked for permission from the museums to allow interviews to happen during work hours. Participants were responsible for ensuring they had appropriate time during their workday to complete this interview. The devotion of time to this study may not bring any benefits to the participant. Having an informed consent form, asking permission for interviews to take place during working hours, and asking questions that refrain from gathering information that may be sensitive, minimized these risks to the participants.

Expectations

Going into this research, I expected to learn how each museum utilizes their education collection and any patterns that might have been found when conducting my research. I also expected that the education collections would have some aspect of value. This aspect could have been the amount of storage given to the collection, the care and condition of the items, or the educational benefits of the items within the collection. My goal for this research was to ultimately cast light on the subject of education collections and I expect to find other museum professionals who have a similar interest in the value of education collections.

Potential Research Benefits for Participants

This study will hopefully benefit museum staff in the utilization of education collections. Overall, the impact of this study is to present information on how education collections are used and valued and document the approaches used within natural history museums. However, no direct benefit to participants was expected.

Data Collection and Analysis Procedures

Data Collection Methods

The main method of data collection was interviews with museum professionals. Other data collection was website analysis, which included the evaluation of online information pertaining to the education collection. A website analysis was conducted for prior information regarding the education collections and educational programming at the three natural history museums. This website analysis provided preliminary information and was useful in the development of the interview questions. Website analysis included information that is publically available. This information included the number of educational programming at the museum that may use items within the education collection, as well as the museum's mission and overall goals. Website analysis also included any information pertaining to the education collection that

is on the website. For example, the Denver Museum of Nature and Science has public information that describes the objects within the education collection and their relation to educational programming. Website analysis was important in the development of my study.

The interviews were conducted in Eugene, Oregon through phone calls, since that is my current residence. However, the interview conducted at the Museum of Natural and Cultural History, which is located in Eugene, OR, was conducted in person at the museum. The frequency of involvement for each participant was limited to one interview. The interviews were limited to one hour per interview.

Specific interview questions were created for all participants. Interview questions were catered toward each position within the museum. Questions were repeated to different position professionals to gather substantial data. However, some questions that were asked during the interview were based on the professional's position because each position within the museum can have very different roles and duties.

The interviews focused on generalized questions concerning the education collection and the role of the individual. For example, a question that was included in the interview was "How do you define your education collection?". An interview script containing generalized questions for all participants has been added to the appendices as Appendix B.

Data Collection Tools

Data from the interviews were conducted through two types of methods. The first was through an audio recording that captured the full interview. The second was hand written notes to point out specific key words or trends that might be important when comparing the case studies. Website analysis was conducted through hand written notes that were later typed and put onto a computer file. Uses of website analysis have been stated in the above paragraph.

Coding and Analysis of Data

Since I conducted a comparative study among three museums (the High Desert Museum, the Museum of Natural and Cultural History, and the Denver Museum of Nature and Science), the data collected was kept separate. Coding consisted of recognizing practices that were found in the data collected. These practices were related to the management and care of the education collection, the organization and classification of these objects, and the use of the objects within the education programs. A comparative study of these coded themes or trends produced a discussion of value of education collections within natural history museums. These patterns or comparisons allowed me to analyze which approaches are more likely to be found within my three case studies. I analyzed this comparative study through the use of literature review of past case studies, as well as my own research of the three natural history museums. Coding consisted of classifying data into a specific number of themes. These themes included: object classification, management of the objects, and uses in educational programming. I chose these themes because they allowed me to investigate what patterns and comparisons can be seen in the utilization of the objects in the education collection.

Validation Strategies

The validation of this research is through a comparative study. Using three separate museums allowed me to obtain a large amount of information pertaining to the use of education collections. There is also the validation through my personal experience, such as having the opportunity to catalogue and document the education collection at one of the case study museums. Another form of validation is through the literature review and the study of how value may be an important component within museums and the management and care techniques of collection objects.

Recruitment Documents

An initial email was sent to the participants to ask them to think about the possibility of being part of the study and their initial interest in the study. After a corresponding email was returned from the participants, a more formalized recruitment letter was sent to these individuals. This recruitment letter informed them about this study and why it was being conducted. The recruitment letter is a basic template that was sent to each possible interviewee, with the appropriate revisions made based on the participant. I recruited all of the participants for this study. A recruitment letter (appendix C) and initial email (appendix D) has been attached to this paper.

Informed Consent Procedures

I obtained consent from each museum to conduct this research. I verbally asked for consent through a personal one on one conversation and a phone call with each museum participant. This conversation took place before starting the interview. I used the same language and text used in the consent form, however, I asked for their consent verbally. Verbal consent was obtained for interviews conducted via phone call or in person, according to the requests outlined in the consent form. A consent script, as well as a consent form, has been added to this research plan. If there were any questions about providing consent, I answered these questions either through email or phone prior to the interviews. A copy of the consent form was sent via email to the participants for their own individual records. I performed the informed consent procedures and have training from my coursework in Research Design. Through my Research Methods course, taken fall term of 2015, I have also been taught informed consent procedures. The participants understanding of the consent form was assessed through asking if the participants had any questions about the study or the consent form. A formal meeting occurred

with each participant to read and reflect the information presented on the consent form. A consent form has been attached to this paper as appendix E.

Confidentiality

All electronic data that was collected was placed on the computer of the researcher that is password protected. Any hand-written notes were typed into word documents and placed in the files of the password-protected computer. The original copies were shredded. No pseudonyms were used, as the interviewees' identities will be known in the study. Once the study has been completed and the University of Oregon has accepted the research, the research data will be erased from the computer.

Investigator Experience

In 2014, I graduated from the University of Oregon with a Bachelor of Arts degree in Anthropology. I am continuing my education through the study of Arts Management with a concentration in Museum Studies through a Master's program also at the University of Oregon. I have worked at the University of Oregon Museum of Natural and Cultural History since 2013 and have been awarded the Graduate Laurel Award through the education department at the Museum. This graduate program helped me to become more established in the museum field and helped me to learn more about arts and administration. I have some experience with education collections through a practicum course taken at the Museum of Natural and Cultural History on campus. Through this practicum course, I catalogued and documented the education collection into the database system Past Perfect. I also have coursework in Research Methodology, which was taken winter term of 2015, as well as a course in Research Design that was taken in the fall of 2015. I have also done literature review work in a Research credit that was taken spring of 2015.

Chapter 2: Literature Review

Introduction

I have based this literature review and definitions on background information and current theories of collection management and educational practices within museums. This review looks at the patterns and procedures used in past case studies, as well as observations of today's methods in museum practices. There has been a gradual shift in informal learning and education within the museum field, which focuses more on interaction and interpretation by the public and visitor. This literature review will help to explain this phenomenon and create a meaningful explanation of how museums are using education and objects within an informal setting.

Collections Management

Collections management is the process by which museum collections staff preserve and manage the museum collection. According to the American Alliance of Museums, museum collections should be used and managed in the following ways: "The museum owns, exhibits or uses collections that are appropriate to its mission. The museum legally, ethically and effectively manages, documents, cares for and uses the collections. The museum, guided by its mission, provides public access to its collections while ensuring their preservation" (aam-us.org, January, 2016). The AAM has developed specific regulations for the uses of collection items and created preservation procedures for such items within the museum. The procedures for managing collections stem from a formalized document; this document can be distinguished as a collections management policy.

Before the appearance of management policies, the collecting management styles that can be seen today are different than previous collection management styles. Oral histories and archival inventories were key in the management and preservation of the collections. These

oral traditions and inventories were important because they allowed for objects to be added to the collection and created a classification of items. Austin and others (2005) discuss how collections were managed and maintained in previous years. The authors of this article state, “Precursors to current philosophical tenets in preventive conservation can be discerned in oral history and archival records, which describe the prevention of damage through pest control, collections maintenance, proper storage, and careful display” (p. 186). Another interpretation of previous management styles includes, “A catalogue of a museum offers a printed list of the objects in any systematic order, preferably with a description that at least enables the reader to identify the object” (Buck, 1998 p. 2). However, collection management styles today include preserving and managing objects through a more complicated system. Management of collection objects include: instigating guidelines for accessioning objects, de-accessioning objects, pest and environmental control of storage facilities, cleaning and damage control of objects, input of accession numbers into a database system, and disposal of objects within the collection. Collections policies are important when looking at the preservation and care of the items, as well as interpreting the mission and goals of the museum in comparison to the objects within the collection. Collections management policies and the appearance of collections managers and staff, has led to the distinction of value for the collection. Policies are implemented to provide adequate management for the collection, while also continuing to provide access and interaction to the public. Buck (1998) also acknowledges providing access and interaction to the objects within the collection. She states, “Museums provide a location where objects of various kinds are assembled with the intention of collecting, preserving, and making them accessible to the public at large” (p. 2). The intention for collections management and the preservation of objects that are

accessioned into the collection, are designated for the public and the interaction with such objects.

The article “The Value of a Collections Management Policy for Museums”, written by Shadia Mahmoud, looks at the management of collections within museums which includes the care and preservation of objects. Mahmoud emphasizes the need to follow a policy of collections management for all museums, regardless of location, funding, or types of items within the collection. He defines a collections management policy as:

“A collections management policy is a detailed, written statement that sets forth the purpose of the museum and its goals, and explains how these goals are interpreted by its collection activity.... [It is] a public statement of the museum's professional standards for objects left in its care” (2004, p. 23).

The subject of collections management policy is a way to provide a basic informational guide for museum collections staff. Based on this definition, different museums can evaluate their collections management and the connotation of the collection determined by museum staff. Collections management policies are an integral part of preserving and managing the museum collection. With a collections policy, collections staff can manage their items based on the mission and goals of the museum. Another definition of a collections policy created by AAM (2012) states:

“A collections management policy is a set of policies that address various aspects of collections management. This policy defines the scope of a museum’s collection and how the museum cares for and makes collections available to the public. A collections management policy also explains the roles of the parties responsible for managing the museum’s collections” (aam-us.org, January 2016).

This definition explains that the collection management policy is a relevant and integral part of managing items within the collection and can influence the duties of each collections staff member. AAM also evaluates why a collections management policy is important within the museum realm. It states: “Collections advance the museum’s mission while serving the public. Because collections are held in trust for the public and are made accessible for the public’s benefit, the public expects museums to maintain the highest legal, ethical and professional standards.” (aam-us.org, January, 2016). The AAM is explaining here that a policy for a collection is important because of the connotation and representation it can have based on public access and evaluation. In order to present the objects within the collection to the public, a management policy is needed. These policies can influence how museum staff can manage their collections in terms of internal and external benefit to the museum and the visitor.

Education Collection

In order to fully understand the analysis of uses of education collections, the term ‘education collection’ needs to be defined. An education collection is sometimes described as a teaching collection or teaching props. The term education collection can be used to identify a collection or group of objects within a certain domain or department; in this study the collection would be part of a museum and more specifically, it would be controlled and managed by the education or public programs department. A collection can be considered an assortment of objects, as well as ‘cultural keys’ (Keene, 2005). This means that a collection of objects influences the way we interpret and understand culture and it is also a way in which to become interested in another culture. Collections can be described as a way to continue the complexity of life and societal change and allow for people to stay connected to the past and specifically his or her family history (Keene, 2005, pg. 6-7). Education collections, in this regard, can encourage

an emotional attachment while also allowing for critical thinking and evaluation. Macfarlan and Johnson (2004) state, “Today, education collections are a widely used tool that provides visitors an opportunity to interact with real museum objects” (pg. 103). Education collections can be considered teaching tools, as well as important replicas of historical objects that encourage museum visitors to participate in hands-on interactive activities. Krmptich (2015) describes her experience with objects as methods for education and inspiration for learning and critical thinking. She states:

“I am influenced by my own collections-based employment and research that approaches artifacts in museums as potential teachers—as catalysts for the telling of oral histories, language and vocabulary, family stories and memories, artistic techniques, modes of production, historic relations, and shifting worldviews” (p. 112).

Krmptich does not explicitly describe an education collection, but she looks at how objects can be used to influence informal learning for a public audience. She interprets objects as learning catalysts for interpretation and gaining knowledge, which can be related to the description of an education collection. According to Krmptich, objects can be considered important because of their relation to education and thought provoking meanings.

Macfarlan and Johnson (2004) explain that, “Education divisions have assumed greater importance as the museum community has acknowledged its intertwined relationships with society's educational needs. And as education divisions have matured, so have museum education collections” (p. 102). The evolution of the education department has in turn developed the education collection. A collection was created in order to serve the education department in a museum and allow the museum to represent itself as an educational institution; focusing on programming that incorporates the objects in an education collection. If an education department

was created for developing learning experiences in an informal setting, then education collections were created in order to promote a hands on interactive, and overall, better learning experience for the visitor. Objects within this type of collection can be considered important to the visitors of the museum in terms of educational experiences and the presentation of historical meaning and cultural expression. The relationship of objects to the museum, and to the education department, can be based on the importance of the objects within the collection. In other words, one might question how the museum values its education collection and the objects that are now part of the educational department within museums.

Prior to the rise of the new museology movement and its emphasis on the educational role of museums, objects and collections were seen as the defining feature of museums and what distinguished museums from other public institutions. As Dudley (2012), states:

“...for most institutions and most observers it is objects, and the collection, preservation, storage, documentation, research and display thereof, that most easily characterize museums in contrast to other sorts of publicly oriented organizations which may also have goals of keeping and expanding knowledge, and educating and entertaining people (p. 1)”

But with the rise of the new museology movement, beginning in the 1960s, and the shift away from a focus on objects to a greater focus on the educational role of museums in society and their visitors, objects and collections began to take a back seat to educational programming and exhibitions. The rapid expansion of and emphasis on the educational function of museums was alarming to some who believed that object-based research and curatorial work was being devalued and sacrificed in the process. For example, John Terrell, in an essay published in 1991, decried what was taking place at the Field Museum in Chicago, where he was a researcher and

curator. He feared that the new emphasis was not as much about public education as it was about raising visitor numbers and revenue: "...museum education here and elsewhere in the country...has been deputized by the museum presidents and boards of trustees to do whatever needs to be done to boost attendance figures at the museum gate" (p. 119). And furthermore,

"The workshop leaders at the annual meetings of the American Association of Museums...are declaring the era of the curator-driven exhibition is dead: From this day forth, we will give our museum visitors what they want, when they want it and how they want it...from now on museum educators are to be 'the choosers', the lucky ones to decide what visitors may see and not see in museums" (p.119).

Based on his experience at the Field Museum, Terrell was clearly apprehensive about the decision to expand the educational mission of the museum at the expense of research and collections especially if it was not based on sound research and science. In short, he warned against the "Disneyfication" of museums and turning them into popular attractions.

Some two decades later, Steve Conn in his book "Do Museums Still Need Objects" published in 2010, was voicing the same concerns. According to Conn:

"...objects have lost pride of place in many museums because they aren't necessary to fulfill some of the functions we now expect museums to perform...over the course of the last one hundred years, the place of objects in museums of all kinds has shrunk dramatically. Museum exhibits of whatever sort make use of far fewer objects than was the case at the turn of the twentieth century" (p. 22).

Conn and Terrell make valid points since object and collections based research within museums has continued to decline in importance versus educational developments. However, with the growth and increasing use of educational collections in museums as a source of "object-based"

learning and experience, museums are showing how the relationships among education, research, and collections are inseparable.

Today, education collections, or collections specifically created for object-based learning, that can be handled and used in a variety of activities are being used as tools for promoting the educational mission of a museum. The creation and use of an education collection also upholds the responsibility of a museum to be a good steward of its collections in terms of conservation. In short, education collections can allow the visitor to have an educational learning experience by creating an interactive environment, while also helping to maintain the mission and goals of the museum.

Education collections and objects can be used as tools in educational programming that involves multiple learning pathways. As Davis (2012) suggests “Object and museum based projects have a powerful ability to engage students with multiple intelligences, different learning styles, and diverse interests” (p. 610). He stresses how objects used for educational purposes can have an impact on the understanding and critical thinking of the visitor. In an article by Macfarlan (2001), about the Museum of Texas Tech University (1996), the author states education collections are,

“...accessioned, documented, and catalogued objects that are used for interpretation, participatory exhibitions, and educational programs. These objects are owned by the Museum and are subject to possible damage or destruction due to supervised utilization. These objects are given reasonable care and are viewed as important to the mission of the Museum” (pg. 167).

Using collections for public education can increase the value of the museum in the eyes of the public and in turn, influence how the items are cared for and preserved.

Sully (2011) focuses on how museum staff can use collection database systems in order to develop educational programming for the museum, and emphasizes an effective way in which to make collections accessible to the public and to create educational programming with the collections. These database systems can be a way of making the collections more accessible and thus useful as outlets for museum education (pg. 229-235). In recording and documenting the objects within the collection, the education department can create educational programming that can also include the use of objects.

Museum Education

Hein (2006), a leading expert in the field of museum education, discusses how it is the responsibility of the museum to promote education, as well as provide visitors access to the museum. He states in his chapter “Museum education converges with social responsibility: the social service that museums, as public institutions, provide is education” (p. 349). Hein is an advocate for how museums can be an outlet for socialization through educational programming. Hein believes that museums can offer a form of education that is intriguing and interesting to a wide audience and increases access to the collection, the exhibits, and the museum in genera

Suzanne Davis (2012) explores how academic museums are using the idea of access and education in relation to collections to further enhance the teaching of university students. The author states that “Object and museum based projects have a powerful ability to engage students with multiple intelligences, different learning styles and diverse interests” (p. 610). Davis is intrigued by the idea of object-based learning and states that more universities are making their museum collections accessible to the student population. To enhance access for students, academic museums are creating online databases and galleries that can showcase the objects within the collection and provide an outreach for research and interest in museums. Davis uses

the example of the Kelsey Museum at the University of Michigan to illustrate how museum staff offer object -based classes in order to more fully engage students and community members (pg. 608-637). Using objects in educational courses can increasingly impact the learning experiences for the student. The use of objects in an informal education setting, such as a museum, can offer a variety of people the opportunity to learn in an interactive and participatory way.

Object Value

There are many different definitions of the word ‘value’. One definition according to Merriam Webster dictionary is “usefulness or importance” (Merriam-Webster.com). In other words, it is the way in which society determines what is useful or important. This also affects the way in which museums value objects and how they portray such objects in exhibitions, care for objects in collections, and use objects in educational programming.

According to Handler (1992), objects, and museum objects specifically, have no value or meaning outside their social and cultural context. He states, “The treasures that museums collect... have no intrinsic value or significance apart from the particular social contexts in which we may encounter them” (p. 21). Handler emphasizes that in order for objects to have any meaning, a social value must be placed on the object. In this respect, objects have no meaning as just physical, tangible objects. “To be meaningful, objects must be surrounded by other objects, by words, by human activity” (p. 21). The ways in which objects are valued is highly dependent on the larger social and cultural contexts in which they exist. The value and meaning of objects also shift as they change contexts, for example, when they are removed from their living cultural context and recontextualized into the culture of a particular museum where they take on new values. Once objects have been placed in a museum, they become valuable. Handler also looks at the significance of objects and the ways in which this significance might change.

“The significance of an object changes according to the state of our knowledge about its creator’s identity. In this sense, the value that we bestow upon an object...is not intrinsic to the object. Rather, the creator’s identity is connected to the object as a meaningful fact within an interpretive framework” (Handler, 1989, p. 23).

In other words, the significance or value of an object is dependent on the history or biography of the object. This value and meaning, according to Handler, can change depending on the historical context as well.

Charles Saumarez Smith (1989) emphasized how, in the past, “The essential feature of museums...was that the meanings which were attributed to the artefacts were held to be not arbitrary” (p. 6). Today, however, as shown by Handler and other authors, their meanings and value can change. The meanings and values projected onto objects is a reflection of the museum’s type, i.e., art, science, history, and so on, as well as its mission and purpose. The ways in which museums present themselves also impact the implication and interpretation of objects and artifacts (Smith, 1989, p. 19). In this regard, museums create value for objects by emphasizing the use and need within a museum exhibit space and collections facility. Without placing such value on objects and the utilization of objects, museum practices might be considered arbitrary, if not useless. Within the practices of collection, exhibitions, and education at a museum, object value and utilization can be seen and performed.

Value can be represented through a hierarchy, which can impact the relationship of the object to the museum. This value hierarchy can be seen as a scale: a scale that determines how valuable objects are within a museum. Is a specific object valuable based on context and history or based on use and engagement? These stages of value contribute to the idea that value can either progress and develop or depreciate depending on the context or use, and the decision to

place an object within a value hierarchy is ultimately determined by the museum itself.

The Visitor Experience

Natural history museums are public institutions that provide the general public with an educational experience. This informal learning opportunity helps to satisfy the curiosity of the visitor and encourage critical thinking of science, nature, history, and culture. But, what aspects allow for an exceptional visit to a museum and what are the museums providing visitors that allows for an educational, but enticing experience? John Falk (2006) states, "...visitors are likely to enter a museum with an *entry narrative* and these entry narratives are likely to be self-reinforcing, directing learning, behavior and perceptions of satisfaction" (p. 112). Falk describes the idea of perceptions and the satisfaction of the visitor experience and the idea that visitors have a personal narrative or identity that influences their perception of the museum. Museums today have focused their attentions on creating an atmosphere that caters to these perceptions and satisfactions of the visitor. Conn (2010) states, "Museums are now much more concerned about lighting and other atmospherics, traffic flow, and flexible exhibition space than was the case in the late nineteenth century" (p.12). Museums today are enhancing the overall museum experience for the visitor and are creating an engaging environment through technical and interactive exhibitions. Museum professionals now look to engage their audiences through a pleasing aesthetic appearance and technical advancement of the museum. Conn (2010) also emphasizes, "[museums] have attracted people who come for the experience of the building itself (p. 12). This statement reflects the idea that the museum is being evaluated based on the excitement the museum provides to the visitor. Seeking an awe-inspiring experience and being entertained by interactive exhibit designs now is seen as one of the reasons to visit a museum.

A case study was done by Edward Taylor and Amanda Neill on “Museum Education: a Non Formal Educational Perspective”, in which the researchers observed adult participants interacting with programs in different educational settings. These settings included: parks, historical sites, and cultural institutes, but were not described in specific locations. This article interprets how education programming can be effective for the visitor and what the docent or interpreter can do to ensure an intriguing overall experience. The researchers go on to discuss the role of the docent in education programming, and they find four themes from all educational settings: “informally appraising visitors’ interests”, “content driven epistemological approach”, “questions from visitors”, and finally, “providing a fun and pleasurable educational experience” (pp. 26-27). These four themes generated a more valuable and interesting case study due to the fact that all four themes could be found in all of the education settings and the docents that were observed provided their visitors with an educational experience. But why are these four themes important when discussing and interpreting educational programming?

The reasoning, according to the researchers, is that there are certain characteristics and behaviors that can provide a more fulfilling and positive visit from the guest. Looking at the first theme for example, “informally appraising visitors’ interests”, the goal behind this theme is to look at what interests the people who are visiting the museum and what they want to learn. The researchers state in their article “An informal appraisal seemed to assist the educator in making connections between the site and the visitor’s personal lives” (p. 26). In order to make a connection between the museum content and the visitor, an obvious interest in the visitor’s personal life is crucial. In this regard, the researchers conducted interviews to evaluate how the docents interacted with the visitors. The museum staff or docent needs to be able to promote the museum mission in a way that will interest the visitor and will be an educational, yet intriguing,

experience. This article looks particularly at the idea of how to create a better experience for the visitor and the researchers provide insight on how to promote the mission of the museum or cultural institution.

Falk (2009) interprets the visitor experience as how the visitor engages with the museum and if the visitor's needs have been met. He states, "Satisfaction is commonly used as a measure to judge how well an organizations products and services meet or surpass customer's expectations.... Not surprisingly, many museums have become quite diligent in trying to measure visitor satisfaction" (p. 118). Falk uses his interpretation of the visitor experience in relation to how museums are presenting exhibitions, displays, and educational programming. The ways in which visitors interact with certain aspects of the museum is determined by how the museum caters to visitor needs and expectations. Falk states a clear relationship between the visitor experience and the presentation and expression of the museum. Falk discusses the idea of a museum visitor experience model. This model emphasizes that visiting a museum can satisfy an identity related need and during the visit can create personal life-long memories (p. 157). Falk looks at the identity of the visitor and how a museum can influence the development of identity and create a connection between the visitor and the museum.

Chapter 3: Case Studies and Presentation of Findings

Introduction

In order to better understand how natural history museums utilize their education collections, as stated previously, I conducted a case study analysis using three natural history museums: The University of Oregon Museum of Natural and Cultural History, The High Desert Museum, and The Denver Museum of Nature and Science. This comparative case study analysis focused on the use and management of objects in the education collection and identified any comparisons or patterns that could be found across museum settings. I conducted interviews from staff at each museum to gather information about three different aspects of utilization of the education collection: 1) Management of the objects, 2) Organization and classification of the objects, and 3) Uses in educational programming. The management of the objects would consist of preservation techniques and overall care or supervision of the collection. The organization and classification of the objects would consist of the storage of the objects and the grouping of the objects within the space provided for the collection. The organization would also include the cataloguing and accessioning of the objects in the collection. Finally, the use in educational programming would include the utilization of the objects in hands-on interactive activities in programming at the museum. All three museums distinguished themselves as being educational institutions. This means that each museum, in their own way, want visitors to learn and use critical thinking while exploring the exhibits. Each museum, in my comparative case study, uses certain techniques to inspire learning and participation. These techniques include using objects from the education collection in order to educate their visitors. The use of objects in education programs for each museum, creates a more detailed and in-depth experience for the student.

In this chapter, I will discuss the three case studies that were examined for my research project. This discussion will include information about each museum, providing information about the education programs and any information pertaining to the education collection from the websites, as well as presenting the data found when interviewing select participants. The focal point of this chapter will be on determining how the objects in the education collection at three natural history museums are used and maintained in the museum. The main focus of this chapter is centered on the interpretations of the selected participants. The presentation of data in this chapter, which has been solely collected from website analysis and interviews, will be useful in determining how objects are utilized and ultimately, valued by museum professionals in natural history museums.

Case Study One: University of Oregon Museum of Natural and Cultural History

Background Information

The Museum of Natural and Cultural History (MNCH) has been on the University of Oregon campus, located in Eugene Oregon, since 1935 when Thomas Condon joined the University of Oregon and brought a large collection of fossils to the UO. Today, the museum contains objects from all over Oregon, the Pacific North West, and the world. The mission for the museum is to inspire learning and critical thinking about Earth's cultures and natural phenomenon. The stated mission is currently, "The Museum enhances knowledge of Earth's environment and cultures, inspiring stewardship of our collective past, present, and future" (MNCH Strategic Plan, 2015, pg.12) The museum looks to educate its visitors by creating thought provoking exhibits, as well as providing education programs for children and adults (natural-history.uoregon.edu, March, 15 2016). At the time of writing, the museum has four exhibit spaces, two of which are permanent and two that are changing or revolving exhibits. The

two permanent exhibits include a cultural hall titled “Oregon: Where Past is Present” and a natural history hall “Explore Oregon”. In the back of the museum there are two collection vaults that house the permanent collection. The objects in the collection vaults range from anthropological collections to biological and paleontological collections. According to the website the collections, “[Span] more than 14,000 years of human history. [T]he collections contain archaeological and ethnographic objects from Oregon and around the world” (natural-history.uoregon.edu, March, 15 2016). Objects from each collection can also be found across the University of Oregon campus due to lack of space in their collection vaults at the museum facility.

Website Analysis

Through my website analysis of the MNCH, I found that it provides a variety of different educational programming that would include the use of objects for interaction and participation in each program. The programs for preK-12 and outreach programming included on the website are: the Little Wonders Program, Camas Oven, Storm Boy, Fun with Fossils, Exploring Fossils, Investigating Artifacts, Animals of Ancient Oregon, Animal Tracks, Oregon Archaeology Detectives, The Famous Fossil Find, Ride the Rock Cycle, Adapt Move or Go Instinct, and Cultural Scene Investigation (natural-history.uoregon.edu, March 15, 2016). Each program caters to a different age group, starting with Pre-K and ending with high school. The website also includes a descriptive analysis of each program, some of which describe the use of hands-on interactive activities with the use of objects. The programs that are listed here are the most likely programming that will include objects from the education collection. Other programming, such as University courses and workshops, are less likely to include objects from the education collection. More information about this topic can be found in the one on one interview with a

selected participant from the museum. This analysis of programming found on the Museum of Natural and Cultural History's website was important to my research because I was able to find preliminary information pertaining to object use when looking at the descriptions of the education programs. The extent to the information about the education collection was provided by the descriptions of the education programs.

Presentation of Findings One

Through an interview with Robyn Anderson, Education Coordinator at the museum, I found that the education programs for Pre-K – 12 included objects for a hands-on interactive learning experience. The interview with Anderson consisted of questions pertaining to the organization, management, and use in programming of the objects in the education collection. Robyn Anderson indicated that each education program contains two parts, an exhibit hall tour and an activity in the education room. The activity part of the education program uses objects to help emphasize main points and provide a better understanding of the program topic. According to Anderson, the rate of inquiry for education programs at the museum has been steadily increasing over the past few years. Anderson believes it might be due to their use of objects in their education programs.

Management and Care of the Education Collection

When discussing whether the museum had an education collection or not, Anderson made it very clear that the objects that have been given to the education department and are used in the education programs for pre-k - 12 are considered part of an education collection. In our interview, Robyn stated that they define the objects, which are supervised by the education department in the museum, as the education collection. She stated that "...because the museum has other types of collections it distinguishes [the education collection]... the education

collection is typically items that can be used in education programs because they can be handled, touched, viewed, and stored separately” (Anderson, personal communication, 2016). When it came to management of the education collection, Anderson was the main person in the education department, as well as in the museum, in charge of the objects in the collection. The reason for Anderson being the sole handler and manager of the collection is due to the fact that she continues to find ways to incorporate the use of these objects into her education programs.

The management of the objects in the collection also consisted of the care and preservation techniques of the objects. Anderson emphasized that she would prefer a better care policy for the collection. She stated that the objects are held in boxes and plastic tubs located in the education room and a separate storage area outside of the museum facility. The care of the objects consisted of keeping most of the objects in the education room which, according to Anderson, is a temperature controlled room and could be considered better for preservation of the objects. Some of these objects are stored in a facility behind the museum, which is not temperature or environmentally controlled. However, Anderson did mention in the interview that because the objects are used on a daily basis in the education programs, the rate of deterioration is much higher due to handling and touching of the objects. So containing the objects in a more environmentally controlled room would not necessarily prevent them from being damaged. She also stated, “With using the objects for education programs, obviously there is wear and tear on them and that’s to be expected. That’s why we will have artifacts that are replicas, or specimens that are replicas, and we will try to use those more than the main artifacts” (Anderson, personal communication, 2016). Anderson made it clear that the ways in which they care for the education collection is primarily based on the uses of these objects in the education programs. Without the objects, Anderson believed that the programs would not be as valuable to the

visitors. Although the objects have been handled and touched by many students, community members, and staff, which may eventually lead to the destruction of the objects, the preservation of the objects is important because of their utilization in the education programs. Anderson emphasized that she continues to create programming that can use objects from the education collection.

Organization and Classification of the Education Collection

When it came to organization and classification of the objects Robyn stated that she organizes based on type of object. She stated in the interview, "...we have everything from rocks and fossils to artifacts that have been collected or made for us. They are sorted by those categories, depending on what type of item it is or how it's used" (Anderson, personal communication, 2016). From our interview, I found that the objects are mostly organized based on classification and use of the object. Anderson was able to show me part of the education collection during our interview, and most of the objects were organized based on education program. For example, for the Archaeology Detectives programs, the artifacts used in the activity were contained in a separate area than other objects in the collection. Anderson pointed out that the Archaeology Detectives program is very popular, so those objects have been organized for easy access and use. The other objects in the collection were organized by type, meaning the objects were categorized based on fossils, rocks, artifacts, and biological specimens. Anderson stated during our interview that she would have liked to organize the collection more properly and would like additional space in the education room for all of the objects. However, due to lack of time, space, and funding for such a project, Anderson organizes the objects as best as she can under the circumstances.

Continuing with the organization of the objects, I asked Anderson if the objects in the collection were catalogued and/or accessioned. She replied that last summer they began the process of cataloguing and accessioning the objects in the collection. The purpose for this, she stated, was to gather a more detailed list of all the objects in the collection. Anderson also wanted to create a catalogued list of the objects because it would make designing and developing education programs much easier and more effective for the education department.

Uses in Educational Programming

In terms of uses in educational programming, Robyn Anderson emphasized that the objects in the collection were mainly used in the pre-K-12 education programs. The other uses for the objects in the collection would be for family day events, outreach programming, and other educational events put on by the museum. The extent of the use of these objects in programming other than the pre-K-12 programs would be touchable objects for the public to view and interact with in an informal and outside setting. This means that the objects that are used for other events and programming can be used outside of the museum facility. However, Anderson considers the collection important to the education department in regards to how she develops and manages the education programs. In our interview, I asked Anderson where most of these objects came from and she stated that

“If people have items that they no longer want or need, they can be donated to the museum and then collections will go through the items and decide what they want to keep, in terms of value or importance. If there are duplicate items, the collections staff will keep the best ones and the ones that aren’t as good or do not have enough information about them, then [those objects] will be offered to us” (Anderson, personal communication, 2016).

In this regard, the objects that are in the education collection are usually objects that have been given to the education department by the collections department. Usually objects that are in the collection do not have enough information about them to be part of the permanent collection. I asked Anderson if she thought of these objects as the ‘rejects’ from the collections facility and she told me that she would not consider them in that way. She said that even though those objects have less information about them and are in worse condition than the permanent collection objects, they are still important to the education department. She stated that

“Sometimes we may get [an object] that’s a little damaged or maybe not complete or broken in some way, but in other instances we get really nice artifacts or fossils because they just don’t have enough information about them for the permanent collection. These items benefit us and they benefit the public to be able to see those items” (Anderson, personal communication, 2016).

Anderson made it clear that the items that are used for programming, where they might not be in the best condition, they are important to the visitor, as well as the education department.

Anderson also discussed the fact that some volunteers that work at the museum donate their own personal collections specifically to the education department. She gave an example during our interview, which described one of the volunteers and his personal animal bone collection. She stated in the interview. “ We have a volunteer who has a very large collection of bones and other specimens... so he wants to donate those to the museum’s education department so we can continue to use them in education programs” (Anderson, personal communication, 2016). As far as obtaining the objects for the education collection and their uses in educational programming, the interview with Anderson clarified that the objects are mostly obtained for the education programs. When deciding to take an object for the collection or not, Robyn Anderson considers

how she will use the object in the education programs and what will be the benefits to the visitors and the public if she takes the object into her possession.

Conclusion

When interviewing Robyn Anderson, Education Coordinator of the museum, she was very straight forward in her evaluation of the education collection. She introduced me to new information on how the objects in the collection were used in terms of management, organization, and uses in education programs. Her interpretation of these objects was based on the fact that she is the main person in charge of not only taking care of the education collection, but also designing and implementing education programs that would use objects in the collection. It became clear throughout the interview that Anderson's personal opinion of the use of the objects in the education collection should be through the education programs.

Case Study Two: The Denver Museum of Nature and Science

Background Information

The Denver Museum of Nature and Science, located in Denver Colorado, was founded in 1900 by pioneer and naturalist Edwin Carter. "Edwin Carter assembled a complete collection of Colorado fauna and displayed his specimens in his log cabin home, dubbed the Carter Museum" (dmns.org/about-us/museum-history). The Carter Museum increased in popularity and a new building was added in Denver's City Park in July 1908. The museum has expanded over the years, adding the Phipps Auditorium, the Gates Planetarium, an IMAX theater, and the Leprino Family Atrium and Anschutz Family Sky Terrace. The museum continues to grow in terms of exhibits, programming, and collections. The Denver Museum of Nature and Science encourages its visitors to explore and think critically about nature and science. The mission, as stated on the website, is "Be a catalyst! Ignite our community's passion for nature and science"

(dmns.org/about-us/mission-and-vision, March 24, 2016). The museum looks to inspire an interest in nature and science and to be an inspiration to others to enjoy these topics as well. The vision of the museum is to empower a community to love, understand, and protect the natural world (dmns.org/about-us/mission-and-vision). The museum strives to produce an everlasting love and appreciation for natural history and science. The museum contains 1.4 million objects in its collections. It has roughly six different collections that are all housed within the museum facility. These collections include: Anthropology, Bailey Library and Archives, Earth Sciences, Health Sciences, Space Sciences, and Zoology (<http://www.dmns.org/science/collections/>, March 24, 2016).

The museum offers a variety of different programs for teachers, adults, children, teens, and families. The museum offers field trips to the museum for Pre K – 12 students. The programs consist of: Mystery at the Museum, Dinosaur Detective, The Bear Necessities, Super Animal Adaptations, Heart Lab, Lung Lab, and Med Lab. Each education program is three and a half hours long and occurs during specific times and days during the week. They also offer classroom programs, wherein a museum professional will travel to the schools and teach a forty-five minute education program in the classroom. There are eleven exhibits at the Denver Museum of Nature and Science. These exhibits include: Robot Revolution, Chocolate: The Exhibition, (both of which are temporary exhibits), Discovery Zone, Egyptian Mummies, Expedition Health, Gems and Minerals, Konovalenko: Gem Carvings of Russian Folk Life, North American Indian Cultures, Prehistoric Journey, Space Odyssey, and Wildlife Exhibits (dmns.org).

According to the 2014 Annual Report, over one million people visited the museum in 2013. In terms of educational programming, almost 300,000 children and adults participated in

the field trips, science programs, and professional development workshops. Also, in one year, 70,000 objects went into the research collections (DMNS Annual Report, 2014, pg. 1-36).

Website Analysis

When researching the website for information about the education collection, I found an entire page dedicated to the objects within the education collection. The webpage included the names and bios of the collection managers, a detailed description of the education collection, a description of a synthesis project that took place in 2010, and a fun interactive question and picture that asks visitors to guess the correct answer of an object from the education collection.

According to the webpage, the education collection houses 37,000 objects. This collection is the smallest collection at the Denver Museum of Nature and Science, but could be considered a very large education collection. The webpage states that the benefit of this collection is that all of the objects can be touched and handled. In order to interact with the objects, the visitor only has to sign up for one of the education programs. The education collection also supplies objects for the museum's Touch Carts, which can be found scattered throughout the museum. The objects in the education collection are also used in off-site programs or the classroom based programming. The temporary exhibits also include objects from the education collection. According to the webpage, it seems as though the objects in the education collection are used for a multitude of events, programming, and even exhibits (dmns.org/science/collections/education-collections, March 24, 2016). The information obtained on the webpage was important to my research because it included information that was useful in my examination of the uses of the education collection at the Denver Museum of Nature and Science. The use of this information on the webpage only further added to the interpretations of the education collections manager whom I interviewed for this project.

Presentation of Findings Two

Introduction

In a personal interview with Rich Busch, the Collections Manager for the Education Collection, I found that the information on the webpage was correct in that the objects within the collection are used in a variety of ways at the museum. Busch explained that they define the objects within the collection as the education collection. When I inquired as to why they defined it in such terms, Rich stated that “[the education collection] was designated a collection in 1990... the start of the collection began with 12,000 ‘legacy items’ that were found on desks and in closets at the museum” (Busch, personal communication, 2016). In this regard, the museum considers the objects within the education collection as a main collection at the museum. Rich indicated that the reason it is called an ‘education’ collection is also due to the fact that they are “intimately connected to the public programs department at the museum” (Busch, personal communication, 2016). The education collection at the Denver Museum of Nature and Science, according to Rich Busch, can be considered its own department and entity in the museum.

Management and Care of the Education Collection

Regarding management and care of the objects within the education collection, Busch is the main person in charge of the collection. He described his position as being the main point of contact for uses of the objects in programming and exhibits. Because the education collection contains a large amount of objects, and is considered its own collection separate from the other collections, Busch’s main job is to manage and care for the objects within the education collection. He also mentioned that the education collection was included in the general collections management policy. This means that there are certain policies and regulations

included in the research collections management policy that also apply to the education collection.

Management of the education collection also includes the care and preservation of the objects within the collection. When discussing the preservation techniques with Busch, he stated that the objects are stored in a large room within storage cabinets. When I asked Busch if the room was environmentally controlled, he stated with a laugh in his voice “No. The room is definitely not environmentally controlled or temperature controlled” (Busch, personal communication, 2016). The reason for his humorous answer was not disclosed, but it seems as though Busch would have liked the collection to be in an environmentally controlled room considering the education collection houses over 37,000 objects. Busch told me that even though he wishes there were more regulations on the environment and within the room, these objects are touched and used on a daily basis. So having a controlled environment would not necessarily prevent damage from occurring to the objects. In his own words, “...it is not a main issue at this time” (Busch, personal communication, 2016). Although the objects have been handled and touched by many students, community members, and staff, which may eventually lead to the destruction of the objects, the preservation of the objects is still important because of their utilization in programming.

Organization and Classification of the Education Collection

In regards to the organization and classification of the objects in the education collection, Rich Busch explained in our interview that the objects were classified based on type of object. When I asked Busch what types of objects were included in the collection, he stated “Everything. The objects range from Anthropological to Zoological” (Busch, personal communication, 2016). According to Busch, there are nine different categories; these would include: ethnological,

archaeological, earth science, human health, museology objects, space science, anthropological, and zoological. Objects of each type or category are all stored together. Busch did mention, however, that some objects are harder to classify than others and there are some discrepancies in the system him and his team have created, but that the objects are generally grouped together in the collection.

After our conversation about classification and type of objects in the collection, I was curious as to whether the objects had been catalogued and accessioned. Accessioning objects can be defined as “Accessioning is the process of creating a permanent record of an object, assemblage, or lot received from one source at one time for which the Museum has custody, right, or title, and assigning a unique control number to said object, assembly, or lot” (uaf.edu, 2016). This means that accessioning is creating a record and assigning numbers to each object in order to protect and classify each object in a database system. Looking at the information provided on the website, in 2010 the education collection team received a grant to fund a synthesis project. This included the accessioning and cataloguing of all the objects in the collection. I asked Busch if this project had been finished and if all objects had been catalogued and or accessioned, and he stated that the objects had been entered into a database system and that almost all objects had accession numbers. The synthesis project was completed in 2013. Busch gave me an example of their accessioning system, which included the category or type of object and the number assigned to the object within that category. For example, PA-001 would be a number used in the Denver Museum of Nature and Science education collection. The ‘P’ stands for programs, indicating the program department at the museum, and the ‘A’ stands for Anthropology in terms of a category or classification within the education collection. Each category has a different accession number. However, some objects do not have accession

numbers and are only catalogued within the database system. According to Busch, only commercial items are catalogued, but not accessioned. Busch explained that commercial items were objects that could be purchased online or in a store. He stated, “If anyone can have it, does it make it special?” (Busch, personal communication, 2016). Busch believes that because any person can acquire these commercial objects, they do not need to be accessioned. They are objects that can be bought by the general public and, according to Busch, this makes them easily accessible and not as significant as other objects in the collection.

Uses in Educational Programming

The education collection at the Denver Museum of Nature and Science has many outputs of use. According to Rich Busch, the objects in the collection are used in a variety of different programming at the museum. To begin, the interview with Busch focused more on the education collection and less on educational programming. In this regard, the conversation included where objects were used in the museum and why they were used. As stated earlier in this chapter, the education collection and the education program department have a strong connection or relationship. This relationship helps to determine what objects will be used in terms of educational programming at the museum. Busch mentioned that the museum provides over four thousand programs a year and most of these programs include the addition of objects within the education collection. Busch also stated that some of the objects that can be seen in the exhibit halls are from the education collection. When I asked Busch as to why the permanent (research) collection does not supply these objects, he explained that sometimes the research collection does not have a specific object for an exhibit or there is a need for multiple objects in the exhibit hall that the education collection can supply.

Another place the objects from the education collection can be found is on the touch carts scattered throughout the museum. These touch carts are for visitors to be able to observe and touch the objects that are seen in the exhibit cases at the museum. The touch carts, according to Busch, are important to the volunteers that lead tours throughout the museum. These touch carts provide an example to the visitor and allow the volunteer to elaborate on their interpretation of the information provided.

Similar to the touch carts, are the development of loan programs at the museum. According to Busch, objects in the education collection can be loaned out to local schools in the form of a loan program. These loan programs are customized for the classes and provide objects that would be relevant to the program.

When I inquired as to how the education collection receives objects for the collection, Busch stated that there are a few different ways the objects are acquired. He explained that some of the objects are from the research collection, which includes objects that can be touched or used in programming. Busch also indicated that many objects "...come from grandpa's attic" (Busch, personal communication, 2016). When I asked Busch to elaborate on this form of acquisition, he explained that the general public donates many of the objects in the collection. These are objects that are no longer wanted or needed, or have been found in a relative's attic. Busch also has a relationship with the US Fish and Wildlife Service that sometimes donates animal carcasses or parts to the education collection. Overall, there are many ways Busch obtains objects for the education collection. In our interview, it was made clear that objects are obtained for the education collection, as well as for programming at the museum.

Conclusion

Through my interview with Rich Busch, Education Collections Manager, it was very clear that the education collection is its own entity at the museum. With 37,000 objects, the collection is part of the programming department, but also it can be considered a main collection in the museum. Busch provided information on how the objects in the collection were used in terms of management, organization, and uses in educational programming. Busch's interpretation of the education collection is based on the fact that he manages the collection and is asked on multiple occasions to use objects from the collection in different programming at the museum. It became clear throughout the interview that Busch's personal beliefs of the objects that are in the education collection should be used in programming at the museum and be appreciated by visitors to the museum.

Case Study Three – The High Desert Museum

Background Information

The High Desert Museum, located in Bend Oregon, was founded in 1982 and contains a variety of information pertaining to pioneer history and wildlife exploration. The museum is located on 135 acres of land with a 100,000 square foot museum facility (highdesertmuseum.org, April 7, 2016). The museum looks to encourage participation with live actors portraying historical pioneers and a collection of wildlife animals. The museum contains three temporary exhibits, six indoor permanent exhibits, and ten outdoor permanent exhibits. The outdoor exhibits include their wildlife-enclosed areas and an authentic 1904 saw mill. The mission of the museum is: "Through exhibits, wildlife, and living history, the High Desert Museum creates learning experiences to help audiences discover their connection to the past, their role in the present and their responsibility to the future" (highdesertmuseum.org, April 7, 2016). Overall, the goal of the museum is to help the general public understand a historical past through living

history, exhibits, and wildlife. The founder of the museum was Donald Kerr, who decided to open the museum after raising a wolf cub in his high school biology class. The museum strives to infer an educational element in all programming and exhibit design. With this in mind, the museum tries to follow this point of view through employing the idea that “education and experience are the basis for thoughtful decisions and stewardship” (highdesertmuseum.org).

Website Analysis

Through my website analysis of the High Desert Museum, I found that they provide a variety of different educational programming that would include the use of objects for interaction and participation in each program. The prek-12 educational programming they provide at the museum includes: Discovery Classes, Adventure Tours, and Traveling Trunks. In their discovery classes they divide the programming into separate categories based on topic. For example, under the geology program topic, they have a ‘Rockin’ Geology’ program and under the social science topic they include ‘Traveling the Trail’ and ‘the Plateau People’ programs. Each discovery class caters to a specific age group depending on program type and the amount of information taught. These classes provide students with an opportunity to experience and participate in an interactive program. There is limited information on the use of objects from an education collection in these discovery classes. However, these programs seem to be the most common place to find object use from an education collection. If objects from an education collection are not found in the discovery classes, then they can be found in the Traveling Trunks. As stated on the website, “These trunks are all-inclusive, curriculum-based learning units designed to enliven classroom learning through authentic materials and hands-on lessons” (highdesertmuseum.org, April 7, 2016). This description of the travel trunks indicates that objects are used to inspire an interactive learning experience. The use of ‘authentic materials’ can be determined as touchable

objects for educational programming. The Traveling Trunks include "...artifacts about the topic, curriculum with background information for the teacher, several classroom activities and worksheets that the teacher can copy" (highdesertmuseum.org, April 7, 2016). The high desert museum provides school teachers with the option of renting objects in the form of a traveling trunk in order to explore and use objects in an interactive program.

Presentation of Findings Three

Introduction

In a personal interview with Carolyn Nesbitt, Education Curator at the High Desert Museum, I was told that instead of defining their collection of objects as an 'education collection', they preferred the terms 'bio-facts' and 'artifacts'. These bio-facts and artifacts are not necessarily a collection, according to Nesbitt, and include items such as feathers, pelts, and quills. However, certain wildlife animals that are purely used for educational purposes are, in fact, considered part of an 'education collection'. This collection of animals, used for programming, is separate from the museum exhibit animals, which are used for only exhibition purposes. When asked about the wildlife education collection, Nesbitt stated that "...exhibit animals are rarely ever used for programming and there are animals that are separated for educational purposes" (Nesbitt, personal communication, 2016). A discussion about the wildlife was limited to the knowledge of considering the animals as part of an education collection and that some animals are obtained purely for educational purposes. However, most of our interview was centered on the use of the bio facts and artifacts used in educational programming.

Management and Care of the Education Collection

Carolyn Nesbitt is in charge of managing the bio-facts and artifacts, which are not necessarily an education collection. She stated that some of the artifacts and bio-facts are in fair

condition and others are well kept in their current state. However, most of these objects are replicated, used purely for educational purposes. Nesbitt stated in our interview that “Some of the bio-facts and artifacts weren’t exactly stored correctly, but we are currently in the process of transferring those items to other tubs” (Nesbitt, personal communication, 2016). Nesbitt explained that the term ‘bio-facts’ included pelts, skulls, wings, feathers, and quills. With this in mind, her management of the bio-facts included making sure all items are stored in tubs and are easily accessible for education programming. Artifacts included replicas from the High Desert Museum’s Oregon Trail education program. This would include any historical pioneer objects and items that would be considered useful on the Oregon Trail. These artifacts are duplicates or replicas from the exhibits and, according to Nesbitt, are important to the programming at the museum. As stated earlier, Nesbitt made it clear that the items from the bio-facts and the artifacts are all replicas or objects that have been collected for educational purposes.

Organization and Classification of the Education Collection

Although the objects used in the education department at the museum are not considered part of an education collection, the bio facts and artifacts are still classified and organized. Nesbitt explained in our interview that at this time all items are stored in tubs and are organized based on type of object. She stated in our interview “The bio-facts are organized based on type, so for example, all the pelts are together and all the feathers are together” (Nesbitt, personal communication, 2016). The artifacts, on the other hand, are organized based on the education programs that specifically use the artifacts for the interactive component in the program. Nesbitt also stated that the artifacts are “...organized by specific Native American Tribe” (Nesbitt, personal communication, 2016). In this regard, the tubs in which the artifacts are stored can also be organized based on Native American Tribe. This is connected to their education program

“Plateau People”, where “Museum artifacts and exhibits [are] used extensively in this class” (highdesertmuseum.org). After our conversation about classification and organization of the objects, I was curious to know if the collection of bio facts and artifacts were catalogued or accessioned. Nesbitt explained that their bio facts and artifacts are catalogued, but not accessioned. She stated that there is a master list of the bio facts and the artifacts and she is in charge of adjusting this list depending on when they create more replicas or add more items to the collection. When asked if the collection would be accessioned at a later date, Nesbitt replied that they had no immediate or future plan to accession the items. The reasoning behind this decision was vaguely determined as not enough time or amount of items to really use accession numbers with their collection.

Uses in Educational Programming

The bio-facts and artifacts are mainly used and created for the education programs at the High Desert Museum. Nesbitt made it clear that bio-facts and artifacts are obtained based on the needs for the education programs. Some of these items are also used in kits that are sent to teachers in local schools to use in classrooms. These kits could be considered the ‘Traveling Trunks’, which were discussed earlier in the website analysis. These trunks are used similarly to the education programs at the museum and to encourage students to interact with the objects in a classroom setting. The uses of the bio-facts and the artifacts have no other purpose besides educational programming for k-6th graders. When asked if these objects were used for any other programming, Nesbitt explained that the bio-facts and the artifacts were never supposed to be used for any other programming. According to Nesbitt, they are created “...depending on the classes that are being taught and the needs for the education programs” (Nesbitt, personal communication, 2016).

Conclusion

Carolyn Nesbitt, Education Curator at the High Desert Museum, was very straightforward in her evaluation of the bio facts and artifacts. She provided information on how the items in the collection were used in terms of management, organization, and uses in education programs. Her interpretation of these objects was based on the fact that she is the main person in charge of not only taking care of the bio facts and artifacts, but also deciding what items should be replicated and created for the education programs. It became clear throughout the interview that Nesbitt's personal opinion of the use of the objects in the bio facts and artifacts should be through the education programs.

Chapter 4: Comparisons and Patterns

Introduction

My three case studies have led to a better understanding of the utilization of objects in an education collection. The information presented in this chapter will be based on the perspectives of the participants I interviewed for this study. Analysis of the information gathered from the interviews will be determined by how the museum professionals I spoke with are using their education collections in terms of management and care, organization and classification, and educational programming. I first analyze the similarities and differences found from the three case studies. The similarities found in my research can be considered any patterns found at the three museums.

Similarities or Patterns

In looking at the similarities in terms of management practices at each museum, they include a variety of patterns or practices. From each interview I was able to understand how each museum views or interprets its education collection.

Management and Care of the Education Collection

The most significant similarity I noticed when interviewing my three participants was that they all commented on the fact that the objects in the education collection, or the collection used in the education department, were for educational purposes at the museum. This meant that all the objects and items are essential in the education programs at each museum. My interpretation of this similarity or pattern is that education collections were designed for programming and are currently being used for such reasons. They are important to the design and implementation of education programming at each museum and have a greater purpose and meaning that can be provided to the visitor. The participants involved in this study all manage

their collections to be focused on educational purposes. The participants also impart significance to the education collection in relation to the rest of the museum. Although the programming at each museum differed in terms of topic and subject, all three museums indicated that they use the objects from an education collection for hands on interactive learning and are trying to provide their visitors with an object based educational experience. The participants also emphasized that they were the central managers or care takers of the collections. When asked about this, the common response was that since they were the people controlling what objects went into the education programs and other interactives, they should also be the ones to care for the education collection.

The ways in which the participants explained the care and preservation techniques when interacting with the objects in the collection were also very similar. Each interviewee explained that although some of their objects were in relatively good shape, all of the objects are used for hands-on activities. This would indicate that the objects in the collection might not be the best looking or the most thoroughly preserved, but this was only due to the fact that they have been handled and touched by many children and adults. I found it interesting that all three participants also stated that they wished they had more funding and time to manage and care for these objects. When asked about environmentally controlled storage spaces, all three participants said they would like control to be a possibility, but unfortunately, at this time they are not able to store the objects in a controlled environment. This information made me question whether the museum values the objects in the education collection. If environmental controls are not part of the preservation of these objects, then can they be considered valuable to the museum? On the other hand, because the objects are used and handled they do not necessarily need to be in an environmentally controlled storage facility. However, they are also important to the development

and education of the visitors. From the data collected for this research, my interpretation is that the objects are still considered valuable to the people managing the education collections and the visitors who are able to use them in an education program.

Organization and Classification of the Education Collection

In terms of organization and classification of the objects, all three museums have their own collections management system in which they classify and organize objects in the education collection. All objects in each museum have also been catalogued. Whether it was through a manual list or database system, the objects are documented in some way for managerial and retrieval purposes. All three participants want to ensure they know what is in their collection, how they can use these objects for programming, and how to find all the objects in the collection. A documented catalogue of the objects can be considered a practice found in my three natural history museums. Although the Denver Museum of Nature and Science and the Museum of Natural and Cultural History use a database system to catalogue their objects, and the High Desert Museum uses an excel spreadsheet to document the number of objects, there is a relationship between all three natural history museums. They are all performing the same managerial task by organizing and classifying their objects through a catalogued system.

Uses in Educational Programming

As previously stated, a common theme was discovered when discussing the use of objects in education collections through educational programming. The similarities or patterns that were found here were based on how all the participants emphasized the fact that the objects were created, designed, or collected for programming at the museum. The programming at each museum, although varying in terms of adult versus youth programs, are created based on how the education coordinators, education collections managers, and education curators can use objects

to inform participants and visitors and inspire critical thinking about a specific subject or topic. This similarity was reminiscent of the ways in which Suzanne Davis described her object-based learning. As stated earlier, Davis (2012) emphasized that “Object and museum based projects have a powerful ability to engage students with multiple intelligences, different learning styles and diverse interests” (p. 610). Educational learning in museums can prosper through the use of object based learning and interaction. This idea of programming being the ultimate use of objects from the education collections can further be illustrated in the article by Macfarlan (2001). The author states in the article, “In general, such objects largely are utilized by a museum's education department, providing museum visitors the opportunity to handle and interact with objects pertaining to a museum's collections” (p. 170). This being said, the ways in which objects from an education collection have been used, according to the data collected from this study and research on the subject by other scholars, is through the interactive engagement of educational programming. However, the use of these objects in educational programming can be evaluated further. The data from the interviews suggests that the objects from the education collection are being used for a larger purpose. They are being used to educate the public on cultural life-ways and historical representation and allow the visitor to connect his or her own memories to those associated with the object. But, with this being said, by using objects from the education collection, are museums placing value on this collection? Even though these objects are handled, touched, and sometimes destroyed, is the museum still portraying meaning for the objects by presenting them to the visitor? From my own research on the subject and the data collected, the objects in an education collection can be deemed meaningful and are valued by being part of the museum and by being presented to the public through education programs. The ways in which a museum expresses itself to the public can partially be determined through its use and collection

of objects. If a museum collects objects for an education collection, does this mean the museum wants to express itself as an educational institution created specifically for the visitor expectation? From the data and research collected for this project, a museum can create a relationship to the visitor in using objects from an education collection. The museum has chosen to satisfy the visitor expectations and provide a meaningful experience with the use of objects from an education collection.

The main goal or aspiration the participants described was for the collection to be used more for educational purposes and to be considered relevant in a growing educational outlook within the museum. For example, in the interview with Carolyn Nesbitt, she stated, “The goal for the future would be to update [the collection] to make sure we have a range of items for programming” (Nesbitt, personal interview, 2016). In the interview with Robyn Anderson, she emphasized that she would like to see more replicas and objects added to the collection so as to use them in future programming (Anderson, personal communication, 2016). Rich Busch had a similar view, revealing that he would like to stay relevant and be able to increase the connection between the education collection and the general public (Busch, personal communication, 2016). This aspiration is in keeping with the pattern found in the utilization of the education collection. They are all hoping to keep an object based learning environment in their respective museums. They value the objects as part of the collection and for future programming at the museum to provide visitors with more learning opportunities. It appears that they all want the museum to be perceived as an educational institution for the public that revolves around what the visitor wants and needs and expects. For these three museum professionals, collecting more objects, creating more replicas, and connecting to the public, are all based on the need to please and satisfy the visitor.

Comparisons

Comparison #1: Replicated Objects or Commercial Items

When interpreting the data from the Denver Museum of Nature and Science, Rich Busch made a statement that stood out from the other conversations with Robyn Anderson from the Museum of Natural and Cultural History and Carolyn Nesbitt from the High Desert Museum. Busch stated, “If anyone can have it, does it make it special” (Busch, personal communication, 2016)? I found this statement very interesting because we were discussing the idea of commercially bought items or replicas that were made specifically for a program. Busch emphasized that he did not think that commercially bought objects should be considered important or strong pieces in the collection because anyone could buy a replica. In my other interviews, replicas were seen as necessary for the use in programming. If an object was not already in the collection, one could be bought online or in a commercial store. Also, if needed, a duplicate could be made for the education collection. Anderson and Nesbitt both commented on the fact that they used these forms of objects in order to create better educational programming. Busch’s perception of how objects should be obtained and exhibited is very similar to that of Conn and Terrell. That collections and objects should be considered the central focus of the museum and that the educational expansion, centered on the visitor experience, has replaced the objects and collections focus. Since this collection is considered a permanent collection in the museum, and these objects should represent their historical and cultural context authentically, Busch believes that items should not be replicated or commercially bought. Busch has placed value on the authentic objects in the education collection. Because of the type of objects in the Denver Museum of Nature and Science education collection, most of which are authentic objects, there is no need for replicas or commercially bought items. In the other museums, there

is a larger need for replicated objects for educational programming. Replicas can be considered important to the High Desert Museum as well as the Museum of Natural and Cultural History because they serve a larger purpose for the education department and the educational programming that is being created. According to my participants, these objects still possess meaning and provide the visitor a way to connect to the past and the history associated with the object. These objects have value because they are used in education programs within the education department, and have been placed in a museum collection. These objects have a purpose within these museums to be used for the visitor experience. The objects in the education collection, whether authentic or replicas, have value because of their relationship to the museum and their use for visitor services.

Comparison #2: Education Collection Versus Collection of Education Objects

Another difference I noted throughout this research was the interpretation of how each participant defined their collection. The Museum of Natural and Cultural History and the Denver Museum of Nature and Science both defined their collection of objects as an education collection. However, the High Desert Museum defined their objects as bio-facts and artifacts. This may not seem like a large issue, but the idea that one of my case studies does not consider their objects part of an education collection is interesting. My interpretation of this is based on size of the collection and the mission and goals of the museum. The High Desert Museum is largely a wildlife center that incorporates animals into its programming. Because of this fact, perhaps they do not see the need for a large education collection. This difference may also come from the idea that these objects have stayed the same in terms of value and use. These bio-facts and artifacts have been created specifically for educational purposes and have not changed in terms of meaning or value. Their purpose has always been for the visitor experience.

Conclusion

Overall, there are many patterns or similarities that can be found in the three case studies. There might be similar patterns found in other natural history museums in terms of uses of education collections. Of course, every museum is different, and comparisons were made in order to analyze how my participants managed and used their collections.

Chapter 5: Conclusions

The data collected for this research project has allowed me to evaluate the uses of education collections in three natural history museums. By creating a comparison of the Museum of Natural and Cultural History, the Denver Museum of Nature and Science, and the High Desert Museum, I have been able to formulate conclusions and implications as to the patterns found throughout my data collection. Although all three museums have differing missions, they all look to inspire learning and education in the general public. This research project was designed to be an informative presentation of education collections and its relationship to the museum, museum staff, and the visitor experience. The point of this project was to understand how objects are being used as part of the educational mission of the museum based on the interpretations of the participants involved in the study. Their knowledge on the uses of the education collections was important in the development of this research. The conclusions made from this research project are not meant to be interpreted as a list of recommendations of how to manage an education collection, but to provide perspective on the possibilities that can exist for natural history museums, specifically those with an education collection.

This research project began with a literature review of collections management, collections and education, education within museums today, the idea of object value, and the visitor experience. By applying this literature to my data, I was able to incorporate the research from other authors, and the data from my own study to interpret my findings and come to certain conclusions. I now have a better understanding of the current methods used to manage and utilize an education collection and why education collections exist.

What I have discovered through the literature review is that there is a lack of information pertaining to the management of education collections. While Macfarlan and Johnson created a

case study for analysis of an education collection, other than this study there is limited work regarding this interesting topic. I believe there is still much to be explored on the subject of education collections. I was able to include sources that discussed the idea of objects in relation to education within museums, but unfortunately, some of these authors did not discuss this relationship in regards to an education collection. Currently, the exploration of the uses of objects within an education collection has provided information pertaining to a lack of value or integrity for the objects in the collection. However, conducting research at multiple museums, such as MNCH, DMNS, or the High Desert Museum, can lead to further growth in the subject and provide alternate interpretations. I conclude that the education collections are in fact valued, but they are valued for educational purposes and as a way to stay relevant in the growing and evolving educational experience provided by museums today.

While Chapter Three presented a comparative case study of three natural history museums that have identified the utilization of objects in the education departments, differences in how those practices are executed are still evident and were demonstrated through the interpretations of each participant. The findings in Chapter Three were presented as the personal beliefs and viewpoints of the interviewees. The reason for this type of presentation was due to the fact that this research project was designed to evaluate how museum professionals are using objects from an education collection. Research on each museum and the possible interpretation of an education collection was added from website analysis, and valuable insights and information about the education collections was obtained from the interviews. The information gained from the interviews focused on three key areas of concentration: the management and care of the objects, the organization and classification, and the use in educational programming.

By separating the information gained into three categories, I was able to analyze differences and similarities in managerial practices.

The interpretation of the information gained from the interviews was presented as similarities or patterns and differences or comparisons. I presented the information in this way because there were distinguishable patterns that could be seen with the data collected. However, there were also differences that needed to be addressed. The most common pattern found among the data collected was the use of objects for educational programming and a particular emphasis on object value within the education department and the museum. This pattern introduced a more detailed discussion of how the museum is interpreting its education collection and whether or not these objects, although damaged or replicas, have meaning provided by the museum for the visitor. This pattern could be formulated into a desire to connect with the visitor and to ensure that all programming and object use is based on the visitor's needs and expectations. This pattern also suggests that the objects in the education collection are valuable because of their relationship to the education department, as well as to collections and research. The education collection can be evaluated as a middle ground, as a mediator or bridge between the prevalent education expansion centered on the visitor experience and the need to highlight and use objects in research and collections.

Another pattern that I found was that all three museums apply some management system to their education collection. All three museums entrusted specific staff to manage the education collection who are also responsible for choosing objects for programming at the museum. Most objects in each museum's education collection are stored in areas specifically devoted to education. For the most part, all objects are in fair condition. However, all three participants

would appreciate a more controlled environment for their collections and all objects in the three education collections have been catalogued in one way or another.

Nevertheless, differences are present through the execution of managerial practices and patterns of the education collection, as well as perception and size of the collection. For example, the DMNS collection contains over 37,000 objects. The other two museums have relatively smaller collections. Because of the large size of the education collection at DMNS, it can be considered its own entity and a permanent collection at the museum. Despite the difference in size and presentation of education collections, all three museums demonstrated that they utilize objects for educational purposes at the museum and all objects that are currently being used have some significance for the visitor experience by representing cultural life ways and connecting objects used in the past with objects we use today.

The use of an education collection can be seen as the need to provide the visitor with an exceptional educational experience. From the information I have gathered, the use of these objects within programming can create value for the education collection by being part of a larger purpose. Without these objects, I question whether the programs would be effective or that the museum would be able to connect with the public. These objects have meaning and value because of their relationship to the educational mission of the museums.

There is also a hierarchy that has been established in museums relating to the value of objects and collections with the expansion of education. Historically, education collections have been less valued because of their shift from collections to the education department, or in the addition of replicas to the education collection. However, because of the expanding importance of the museum's educational mission today these objects within the education department are becoming more valuable. Perhaps a new hierarchy of value is in the process of being formed.

I am hopeful that this research will be a catalyst for future research on the subject of education collections. This study is just the beginning of the process of interpreting the value of education collections and the use of objects for education programming in natural history museums.

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Appendices

Appendix A

General Timeline

Fall 2015

October/November/December

- Complete full research proposal, meeting regularly with research adviser
- Draft detailed research instruments
- Draft human subjects documents and complete CITI training
- Submit human subjects application

Winter 2016

January

- Refine research instruments
- Convert proposal into chapter drafts
- Plan with adviser the dates that chapter drafts will be due; submission of chapter drafts will be worked out in agreement with adviser over the next several months

February/March

- Begin data collection and analysis
- Prepare detailed outline of full document
- Begin to submit chapter drafts

Spring 2016

April

- Complete data collection
- Continue with ongoing data analysis

- Write first full draft of final document, submitting chapters to adviser for review and feedback according to plan

May

- Deadline for draft of full document to be submitted to adviser
- Feedback from adviser prior to student presentations
- Student presentations of master's research
- Deadline to submit text and images for inclusion in student research journal
- Continue revisions to full document

June

- Deadline for full final draft to be submitted to adviser June
- Feedback on the full document. Make final revisions.
- Deadline for submission of final bound document copies (collect signature). Submit PDF.

Appendix B

Interview Script

Interviews will be an important part of my research. I want to be able to engage with staff and also be able to look at their education collections in person or on Skype. Some questions that will be included in my script for the interviews will be:

1. How do you define your education collection?
2. What types of objects are included in the collection?
3. How are items added to the collection? How are items removed?
4. Is your education collection catalogued? Why or why not?
5. Are the objects accessioned? Why or Why not?
6. Is there anyone who is in charge of the preservation or management of the education collection?
7. How many objects are in the collection?
8. How are objects used for educational programming?
9. Do the objects in the collection resemble items in the exhibit hall or in the permanent collection?
10. Are objects from the permanent collection ever given to the education department from the permanent collections staff?
11. What are your aspirations or goals for the education collection?
12. What objects you like to see more or less of in the collection?

Appendix C

Recruitment Letter

Dear [*insert name*],

My name is Lacey Wegner and I am a student from the Arts and Administration department at the University of Oregon. I am writing to formally invite you to participate in my research study about the use of education collections in natural history museums. You're eligible to be in this study because you [*insert description*]. I obtained your contact information from [*describe source*].

If you decide to participate in this study, you will participate in an interview. I would like to audio record your interview and then I'll use the information for further analysis of the study.

Remember, this is completely voluntary. You can choose to be in the study or not. If you'd like to participate or have any questions about the study, please email or contact me at lwegner@uoregon.edu or by phone at 541.410.6255

Thank you for your time.

Sincerely,

Lacey Wegner

Appendix D

Recruitment Email

Dear [insert name],

My name is Lacey Wegner and I am a Graduate Student from the Arts and Administration Department at the University of Oregon. I am writing to invite you to be part of my research study about the use of education collections in natural history museums. I obtained your contact information from [describe source].

After I receive an email indicating that you are interested in the study, I will send a formalized recruitment letter that will explain your role and participation in the study.

I hope you will be interested in being part of my research and if you have any questions, please do not hesitate to contact me via email or phone.

Thank you for your time.

Sincerely,

Lacey Wegner

lwegner@uoregon.edu

541.410.6255

Appendix E

Consent Form

University of Oregon Arts and Administration
Informed Consent for Participation as a Subject in The Use of Education Collections in Natural History Museums
Researcher: Lacey Wegner
Type of consent: Adult Consent Form

Introduction

- You are being asked to be in a research study entitled The Use of Education Collections in Natural History Museums
- You were selected as a possible participant because of your position of _____ within the museum field.
- We ask that you read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of Study:

- The purpose of this study is to discuss how education collections are being managed within natural history museums and what types of techniques are used that construct value for the education collection. This research is being conducted for my Master's dissertation.

Description of the Study Procedures:

- If you agree to be in this study, we would ask you to do the following things: be part of a one-hour interview with the researcher.

Risks/Discomforts of Being in the Study:

- The study has the following risks: First, information obtained from you consisting of the dissatisfaction of the status of the education collection within the museum could result in a potential risk. This would include any problems with the education collection or the lack of funding or care for the education collection that, according to you, needs to be changed. This knowledge may in some way become pertinent to upper management, and it could potentially result in negative consequences if upper management does not wish this type of information to be publically known. Second, a loss of work time due to participation in an interview could be considered a potential risk. I will be asking permission from the museums to allow interviews to happen during work hours. You should ensure you have appropriate time during your workday to complete this interview.
- This study may include risks that are unknown at this time.

Benefits of Being in the Study:

- There are no direct benefits to participation
- The benefits of participation are being part of a study that may bring attention to the museum, as well as the practices involved with caring for the education collection.

Costs:

- There is no cost to you to participate in this research study.

Confidentiality:

- The records of this study will be kept private. Research records will be kept in a locked file.
- All electronic information will be coded and secured using a password protected file.
- Access to the records will be limited to the researchers and all records will be erased after the research has been submitted to the University of Oregon.

Voluntary Participation/Withdrawal:

- Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the University of Oregon.
- You are free to withdraw at any time, for whatever reason.
- There is no penalty or loss of benefits for not taking part or for stopping your participation.

Dismissal From the Study:

- The investigator may withdraw you from the study at any time for the following reasons: (1) withdrawal is in your best interests (e.g. side effects or distress have resulted, or (2) you have failed to comply with the study requirements

Contacts and Questions:

- The researcher conducting this study is Lacey Wegner. For questions or more information concerning this research you may contact her at 541.410.6255. You may also contact Christina Kreps, the Faculty Advisor for this study, at cfk@uoregon.edu.
- If you have any questions about your rights as a research subject, you may contact: Research Compliance Services, University of Oregon at (541) 346-2510 or ResearchCompliance@uoregon.edu

Copy of Consent Form:

- You will be given a copy of this form to keep for your records and future reference.

Statement of Consent:

I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this study. I have received (or will receive) a copy of this form.

Signatures/Dates

Study Participant (Print Name)**Date**

Participant or Legal Representative Signature**Date**

Appendix F**Consent Script**

Hi, my name is Lacey Wegner. I am a student at the University of Oregon and I am doing a research study about the use of education collections in natural history museums. Would it be okay with you if I used the information we talk about in my study? This is completely voluntary and you may say no if you do not want this information used in the study. If you agree and we start talking and you decide you no longer want to do this, we can stop at any time. I will be using your name in the study if you agree to talk with me. If it is okay with you, I might want to use direct quotes from you and these would be cited with your name and position at the museum. There is the minor potential risk of private information about the education collection becoming public when we talk in our interview, as well as the loss of work time due to involvement in an interview. There are no expected benefits to you for being part of this study. Do you still want to talk with me and be part of my research?