

THE LIVING HISTORY MUSEUM EXPERIENCE: THE RELATIONSHIPS AMONG
VISITORS, PHYSICAL OBJECTS, DIGITAL TECHNOLOGY, AND HUMAN
INTERPRETERS

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ABSTRACT

THESIS: THE LIVING HISTORY MUSEUM EXPERIENCE: THE RELATIONSHIPS AMONG VISITORS, PHYSICAL OBJECTS, DIGITAL TECHNOLOGY, AND HUMAN INTERPRETERS

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The museum field is brimming with research about visitor experience. However, what is less studied is the relationship among the visitor and the different media contained within a single exhibit. This thesis seeks to understand the relationship between museum visitors, and the media of physical objects, human interpreters, and digital technology. Further, this thesis also seeks to understand how these media provide visitors with an educational and entertaining experience. By taking a mixed-methods approach that includes observation, surveys, and interviews with participants representing demographics of museum visitors, as well as interviews with experts in museum design, development, and interpretation, these relationships became clearer. The analysis of the results shows that participants preferred experiences that include a balance between the different media. Both participants and experts see the forms of media as secondary supporters of the main exhibit narrative as the different forms of media provide elements of education and entertainment. By becoming familiar with the relationship visitors have with the different media, museums and other visitor experience industries can more easily recognize how different media can present their stories and build more meaningful relationships with their visitors.

DEDICATION

This thesis is dedicated to the memory of Kevyn Miller and to the Agricultural staff at the Conner Prairie Museum. Their hard work, passion and constant commitment to agricultural education is the inspiration for this thesis. Thank you for giving this odd duck a place in the barn family.

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CHAPTER 1: INTRODUCTION

Museums are spaces that encourage learning that is self-directed and driven by personal interest (Crowley, K. et al, 2014; King, B., & Lord, B, 2015). Physical objects (signs, tangible items and museum artifacts), and human interpreters are traditional media museums have used to communicate their narrative content to visitors. Now in an era where multimedia technology is pervasive, many museums have also started incorporating digital technology, hoping to provide visitors with an enhanced educational and entertaining experience (Stogner, 2009). Living history museums are a category of museums known for their use of human interpreters to relate information about the past. The purpose of human interpreters is to provide a medium for visitors to engage in the museum's narrative through face-to-face conversations. Human interpreters can appear to visitors in what the industry calls "first-person" and "third-person interpretation" (Craig, 2012 p. 30; Renzthog, S. 2007). In first-person interpretation, human interpreters assume a costumed character role and communicate information to visitors as if they are living in the specific time period the exhibit is portraying. In third-person interpretation, human interpreters communicate information about the past from a modern perspective (Craig, 2012 p. 30; Renzthog, S. 2007). Other museums implement the media of human interpretation, but not to the extent that has made it a trademark of living history museums. The participatory theatre experience of living history museums offers visitors a unique opportunity to experience static, historical material in a hands-on physical environment. Despite the uniqueness of using human interpreters to convey information to visitors about the exhibit narratives, living history museums have also begun to incorporate digital technology into their exhibits (Ciolfi, & McLoughlin, 2012).

Modern museums have always done visitor research. Museum visitor research usually seeks to determine how museums should try to connect visitors to their exhibits (Falk, 2006a).

Along with the incorporation of digital technology, visitor research has also shifted its focus to developing new technology media for visitor engagement (King, B., & Lord, B. 2015). For museums of science and industry, applying modern technology appears to seamlessly work well as a media. Museums of history, however, may struggle to incorporate and blend modern technology with historic artifacts and human media.

Most recent research focuses on designing digital media to provide a meaningful experience to visitors (Bowen et al. 2008), with historic museums studying how to seamlessly incorporate digital media without diminishing the visitor experience (Ciolfi, & McLoughlin, 2012). Less attention is paid in recent research on how human interpretation media provides a meaningful experience for visitors (Castle, 2001; Craig, 2012). Meaningful experience will be different for each person. However, a generalization of a meaningful experience can mean that a visitor has been able to achieve their goals, have their values challenged or reaffirmed, and have personal experience (Boswijk et al. 2006).

Based on the content reviewed in the literature there is a lack of comprehensive studies that also focuses on the relationship among the visitors, digital technology and human interpreters when all are interacting in the same environment. To begin filling the gap in research this thesis aims to provide a comprehensive study on how visitors interact with human interpreters and digital technology when both exist in the same space. Therefore, the goal of this thesis is to provide an understanding of the relationship between the media of human interpretation and digital technology as they affect the museum visitor's educational and entertainment experiences.

Two research questions guide this thesis. The first question asks: what are the relationships among museum visitors, human interpreters, and digital technology? The second question probes further by asking: how do the interactions of human interpretation and digital

technology affect the visitor's educational and entertainment experience? To help answer these questions this thesis first seeks to identify the relationship among museum visitors, interpreters, and digital technology. Further, this thesis will also identify the influence human interpretation and digital technology has on the museum visitor's educational and entertainment experience.

This research took place at the Smithsonian-affiliated living history museum, Conner Prairie, located in Fishers, Indiana and the Indiana Historical Society, located in Indianapolis, Indiana. Two research phases occurred in this study. The first research phase focused on understanding the visitor experience from the perspective of the visitor. The second research phase focused on understanding the visitor experience from experts in the museum field of exhibit design, development, and interpretation.

The first research phase applied a mixed-methods approach that included observation, semi-structured interviews, and surveys. These methods are designed to measure museum experience and multimedia interaction. This phase included groups of participants, representing the most common museum visitors: adults and fourth-grade students. These demographics were chosen because adults (without children) are demographic museums struggle to attract while students on field trips are one of the largest targeted demographics for museums. Eleven adults and 32 fourth-grade students with two teachers participated in the first study. These participants experienced three exhibits, at the Conner Prairie Museum, that represented each media environment. Exhibit one demonstrated human interpretation; exhibit two demonstrated digital technology and exhibit three contained elements of both media.

The three exhibits, pick for this thesis, were chosen based on the most apparent way visitors could engage content within them. The media of physical objects (signs, tangible items and artifacts behind glass) are incorporated into all exhibits. In the first exhibit, participants could engage with a member of the museum interpretation staff, who acts as the primary form of

visitor interaction. This interpreter acted in third-person narration. In the second exhibit, participants could engage with multiple forms of digital technology. In the third exhibit, participants could engage with human interpreters (acting in both first and third person) and multiple forms of digital technology. The three exhibits: Animal Encounters, William Conner House and Civil War Journey, met the criteria for featuring these media.

The second research phase focused on visitor experience from the perspective of the museum. Interviews were conducted with five human interpreters and four experience designers. Four interpreters and one designer were interviewed from the research site, Conner Prairie, while one interpreter and three experience designers were interviewed from the Indiana Historical Society.

Both research phases revealed more about the relationship the visitor has with the media of human interpreters, digital technology and a third form of media: physical objects. Visitors and experts saw media as secondary support to the main exhibit narrative and believe that exhibits should strive to find a balance when considering implementing the different forms. The right balance depends on the amount of educational and entertaining experience the different forms of media can produce while enhancing the narrative.

Not only can the results of this thesis be valuable to museums of any genre, but they can also be lessons transferable to other industries interested in enhancing their visitor's experience. Visitor research is not limited to places that are categorized as leisure activities. Visitor research includes locations that are concerned with customer service or employee and student environments. If this thesis can provide anything let it be a yielding sign that allows the reader to contemplate the current and future way in which we shape our experiences as well as how we communicate those experiences with each other.

The following chapters will discuss a review of the literature, the research methodology, the results, and discussion of research phase one and research phase two, followed by a concluding chapter. Sources can be found in the reference section while charts and interview questions may be found in the appendix.

CHAPTER 2: REVIEW OF LITERATURE

Throughout history, technology has played a part in the development of human knowledge. Technology is a tool that allows humans to evolve past their limitations and extend their minds and bodies to learn from and adapt to new things. This broad range of tools has always evolved alongside its human creators. As we grow, develop, and learn, so too does our technology. As technology continues to advance, the symbiotic evolution of technology and the learning capabilities of modern humans appear to provide unlimited opportunities for intellectual and personal expansion. But technologies may have become so advanced and self-serving that they could fail to acknowledge aspects involved in the learning processes, such as simple face-to-face interaction with another human.

Digital Learning

The tools of advancing society and how they play a part in learning can be seen in the educational setting of the classroom. Educational tools have evolved from slate boards, chalkboards, and textbooks to projectors and individual laptops installed with unique programs designed for wide varieties of tasks. From the archaeological perspective, this advancement in material culture is natural and expected to happen. From a cultural perspective, there could be a wide range of reasons why technology is becoming a standard in education. One explanation comes from the 2016 development plan by the United States Department of Education's Office of Educational Technology. According to the Department of Education, the reasons for implementing digital technology in schools are to "...help affirm and advance relationships between educators and students, reinvent our approaches to learning and collaboration, shrink long-standing equity and accessibility gaps, and adapt learning experiences to meet the needs of all learners" (Office of Educational Technology, 2016, p. 5). Shrinking the equity and

accessibility gaps and meeting the needs of all learners appear as the main arguments for implementing technology in the classrooms.

A 2017 documentary called “Without a Net: The Digital Divide in America” seeks to prove that technology in the classroom is advantageous to students, as it properly prepares them for a future where they will encounter this technology and be required to know how to use it (Kennedy, 2017). With digital technology in classrooms, students from lower-income areas will be able to fairly compete with and receive the same educational opportunities as students from higher income areas (Kennedy, 2017).

Thirteen years before the documentary, a study was conducted at eight California high schools, ranging in socioeconomic status from low to high. The study sought to explore the technology equity gap by investigating the availability, access and use of technology in schools (Warschauer et al. 2004, p. 565). Comparatively, the schools had similar ratios of computers and internet-connected computers per student, with the low socioeconomic schools having a slightly better student-computer ratio average (Warschauer et al. 2004, p. 572). Warschauer et al. (2004) closely studied how the students were implementing the technology in each of their class subjects. An example of their findings showed that a math class in a lower-income area school used their technology for simple programs whereas a math class in a higher-income school would use their technology to implement more complicated programs to execute and create complex math calculations (p. 572-574). Both schools were using technology as a tool to help enhance their learning experience, but because the curriculum offered in each school was not the same, students could only apply the technology in ways that were consistent with the approach of the respective courses of study.

The issues raised in implementing digital technology in schools mainly focus on the lack of education in one subject: digital literacy. According to Kennedy’s 2017 documentary, students

who do not have access to digital tools are more likely to have lower graduation rates, test scores and college degrees than their peers who do have access to digital tools. However, in both the study by Warschauer et al. (2004) and the documentary (2017), it is mentioned that the most important factor to consider is the role of the educator, the “human support network” (Warschauer et al. 2004; Kennedy, 2017).

In a 2012 report summary for the Education Endowment Foundation, the authors focus on the impact digital technology has on learning in schools. The authors claim that research evidence “consistently identifies positive benefits” for technology in the classroom (Higgins et al., 2012. p52). Despite these findings, the authors say they do not know for certain that the use of technology is what is making the difference in the classroom (Higgins et al., 2012). The authors hint that a possible reason for this uncertainty is that it isn’t clear whether the effect is due to the educator’s implementation of technology or the effect of the educator’s personal interaction with students while using the technology (Higgins et al., 2012). The paper appears contradictory, as, at first glance, it seems as if the authors ignore the evidence that shows that the human educator has a greater impact than the digital educator. However, this contradiction may stem from the popular belief that because digital technology is so prevalent in society, the focus should shift from using new media in classrooms to which technologies can be used for specific educational purposes. Once the focus has shifted, technology can be applied to a wider range of educational contexts in schools (Higgins et al., 2012).

The more important question, Higgins et al. address in their report, is not necessarily what kinds of technology are being used, but how these technologies are being used. The human support network of educators is seen as another tool in the classroom. Like many technological tools, the solution to making educators better support systems for their students and the technology is to update the teachers on how to use technology in their classrooms (Higgins et al.

2012; Warschauer et al. 2004; Kennedy 2017). This includes taking on the roles of software management, content creation, and technology support (Higgins et al. 2012; Warschauer et al. 2004; Kennedy, 2017).

As modern technology becomes a part of the educational experience, it brings with it alterations to the idea of a traditional classroom learning environment. Traditionally, classrooms are examples of formal learning spaces. This means that students are guided by the teacher who must follow a standards-based curriculum (Ucko, & Ellenbogen, 2008, pg. 3). Digital technologies are allowing for and encouraging more informal learning. This means that learning is self-directed and driven by personal interests (Ucko, & Ellenbogen, 2008, pg. 3). Typically, informal learning occurs outside of the formal learning space, usually in places such as the home, zoos, science centers and museums.

Museum Evolution

The modern museum is seen and recognized as a place of informal learning, or free choice learning. This type of learning focuses on the participant guiding “their own experience based on their own interests, goals, or knowledge” (Crowley, K. et al 2014, pg. 461). In the museum setting, visitors can “engage with objects, signs, tools, discourses, and new technologies” while the topics people can learn about are diverse in subject and can be transmitted in multimedia that appeal to a wider range in audience demographics (Crowley, K. et al. 2014, pg. 461). However, many people believe that museums do not create spaces of informal learning. This view exists because museums have historically served as places of elitism. The shifting role of the museum audience can help identify the changing nature of the long-standing view of museums. The earliest form of museums was connected to the idea of collecting. Historically, conquerors put the objects of their plundering and looting on display; those who viewed these collections would learn more about the collector than about the collection

(Mondello, 2008). The historical record shows that museums as centers of education were rare. Few, like the Museum and Library of Alexandria Egypt, encouraged educational scholarship but had restrictions on who would be allowed to enter (Erskine, 1995). Elitism would continue to be associated with the museum identity as interest in academic scholarship grew. While early museums after the Enlightenment era still heavily emphasized personal collections, they were increasingly dedicated to scientific discovery and later curiosity (Mondello, 2008).

This element of curiosity paired with collecting inspired showman P.T. Barnum to open his collection to a wider audience (for admission) moving the notion of the museum away from the elitist institution to that of the carnival (Mondello, 2008). These early models of education controlled what and how viewers interacted with the object and the narrative. Little room was left for viewers to engage based on their own interests and needs. It wasn't until the 20th century that museums became what many know them as today (Cameron, 1971; Mondello, 2008).

Museums have paired education and curiosity by presenting their collections to an open public in a way that responds to the visitor's needs, wants, and interests. By 2007, the museum, according to the International Council of Museums (ICOM), has come to be understood as: "a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study, and enjoyment (Museum Definition- ICOM. n.d.).

Even though museums have made changes for the better of society and their communities, many museums that identify as non-profit, find themselves struggling with a kind of identity crisis. By simultaneously trying to keep the visitor's wants and needs in mind, while attempting to create spaces of informal learning and adhering to the definition set by ICOM,

many museums find themselves straddling the border between being spaces of education (reminiscent of Enlightenment elitism) or spaces of entertainment (carnivals of curiosity).

Museums in a Digital Age

In 1971, Duncan Cameron, the director of the Brooklyn Museum, wrote about an “identity crisis” he saw in museums (1971). This crisis, Cameron believed, was restricting progress in museums and, most importantly, how they can reflect and uphold the culture of a society (1971). Cameron suggested that newer museums are trying to counter the public’s opinion of them as elitists. In one example, Cameron (1971) sites a science center that handed out a brochure on opening day with this statement: “Make a list of everything you have been taught about public places, especially museums. Things like, don’t touch anything, don’t get excited, don’t take pictures, don’t laugh out loud...Now tear [the list] up in little pieces and throw it away” (p. 12). The science center was initially built to be a museum, but less than five years after it opened, Cameron had a hard time calling it one. He stated that it was a space of “chaos” with science exhibits mixed with industrial and technological exhibits sponsored by corporations (p. 12). He explains: “There is an infinite number of buttons to push and cranks to turn” and “among all of these are hot-dog stands and soft ice cream in a claustrophobic maze of cacophonous noncommunication” (p. 12). Less than a few months into the opening “all but one staff member, with any museum background was left” (p. 11). This “crisis” can still be seen today. Many museums struggle with how to keep visitors involved, entertained, and educated.

In the wake of the 2008 Great Recession, many museums were forced to draw money from their endowment funds at an unsustainable pace (Briggs, 2017). To escape financial ruin, one museum, from Indiana, decided to make changes. The public first saw these changes in 2017 with the museum’s name. Formerly known as the Indianapolis Museum of Art, the campus now goes by the name of Newfields. Other changes include: an increase of ticket prices from free

admission to \$18; improved gardens and added experiential programs such as mini-golf, a beer garden, and seasonal displays (Briggs, 2017; Visit. n.d.). The art museum is still accessible to the public with the admission ticket. Reactions to these changes have not been positive, as many critics dislike the new admission price as well as the new theme park experience, they believe they are paying for (Briggs, 2017).

In an interview with the Indianapolis Star, Indiana University professor of Public and Environmental Affairs, Joanna Woronkowicz said: “The evolution from IMA to Newfields comes at a time when art museums across the country are developing new programs and offerings to broaden their appeal. Newfields is simply staying competitive...I think part of the backlash the IMA is receiving is due to bad marketing” (Briggs, 2017). The Indianapolis Star also interviewed the Director and CEO of Newfields, Charles Venable, who claims that social media is to blame for overexaggerating the criticism while their numbers tell a different story (Briggs, 2017). Venable says that “since the admission fee went into effect, visitors are getting younger and more diverse, with a nearly 100 percent increase in African-American visitors, a 500 percent increase in Hispanic visitors and a 45 percent increase in Asian-American visitors” (Briggs, 2017). He also stated: “Audiences, no matter what background, no matter what financial situation, are just not feeling welcome at things called art museums... We found in the Indianapolis market a lot of people are not comfortable around something that has the word museum attached to it. Newfields obviously does not have the word museum” (Briggs, 2017).

Other places have embraced the role of entertainment but choose to associate themselves with the “elitist” title ‘museum’ provides. Take, for example, the pop-up exhibition called The Museum of Ice Cream. When visiting this place, one might expect to be educated about the history, social impact, and cultural relevance of ice cream. Instead, this museum encourages visitors to treat it like a theme park or as a private party experience. The exhibit limits the

number of people that can enter at one time and visitors may only purchase a limited number of tickets before the time that they wish to visit. Once inside, visitors are treated to an experience associated with a traditional art museum, where sculptures and figures jut out of walls in a display reminiscent of chaotic fantasy land. Unlike a traditional art exhibit or gallery, visitors are encouraged to touch, play and interact with these objects in ways akin to a playground (attitudes and behaviors strongly discouraged in the traditional museum settings) (Museum of Ice Cream, 2017). There is no historical or educational experience attributed to these exhibit objects, rather the display is designed around the societal construct of social media. Visitors are encouraged to interact with the “art installations” so that they may get that desired Instagram shot (Museum of Ice Cream, 2017).

According to the museum’s mission statement, they are “designing environments that bring people together & provoke imagination” (Museum of Ice Cream, 2017). The limitations on visitors make it more like the museums of the elitism past, but the “museum” appears to be, unapologetically, pushing the boundaries of what a museum is and could be. The museum itself does not claim to be a non-profit nor does it admit to being a museum (Museum of Ice Cream, 2017), though the company states that a museum should “celebrate creativity, passion, history, innovators and innovation” (Museum of Ice Cream, 2017). If these examples are a glimpse of what can and may be expected for future museums, the roles of entertainment and education may become indistinguishable from each other. For institutions that pride themselves as centers of education and learning, the most important elements are the roles that technology and human interaction have with each other and to what extent they each serve as educational and entertaining media.

The media of technology may be what people see as the link between education and entertainment. The modern visitor not only expects to walk away with a satisfied curiosity but

also expects to be entertained. Author Juliet Steyn (2005) wonders whether a future museum or exhibit can be created where the flashy spectacle of interaction and technology does not entirely overshadow the history and experience but instead combines the traditional core values of education and cultural heritage with the interactive technology visitors have come to expect and are used to (pp. 616-617). Author Alexandra Zbucnea (2015) argues that a museum's role should primarily be focused on education (p. 483-484). Attracting visitors, especially new and younger members, has become more of a challenge for museums when their competitors include entertainment venues such as theme parks, television channels and media offering educational programming (Zbucnea, 2015, p. 484). Zbucnea (2015) states that museums should react to society's shift in receiving, producing, and learning information by changing the way museums present their exhibits (pp. 485-486). Zbucnea (2015) suggests museums "make use of some techniques characteristic to theme parks" but cautions that they never transform themselves into pure entertainment centers (pp. 485-486).

In an article from the Irish Times, writer Aidan Dunne covered the 2016 MuseumNext series, which are conferences that explore the direction and responsibilities of museums. Dunne is surprised at how museums are thriving in the digital age but attributes this success to how museums are constantly creating new ways to first entertain and then educate their audiences (Dunne, 2016). One important topic discussed at the conferences was the question of whose interest the museums represent (Dunne, 2016). The consensus of many coincided with the International Council of Museums (ICOM) definition of a museum: to educate the masses (Dunne, 2016). Technology in museums is supposed to allow visitors to experience a museum in a variety of new and exciting ways. (Press, 2016). Museums are implementing technologies such as 3-D scanning and 3-D printing, virtual reality, and special apps that allow the visitor to

explore the physical space of the exhibit better, or to interact and engage with static collections, pieces, and topics in a new and different way (Press, 2016).

The Smithsonian Institution's National Museum of Natural History created an exhibit titled "Dig it! The Secrets of Soil." This exhibit created a balance between educational and entertainment experiences by combining physical and digital media (Megonial, et al., 2010). The goal of the designers of this exhibit was to build public interest in an otherwise mundane topic: soil. How do you make dirt exciting? The designers took the empathetic route. They sought to relate the material to the visitor and the things a visitor might care about. (Megonial, et al., 2010, pp. 706-708) Because visitors are interested and engage often with digital media in their day-to-day lives, the designers incorporated these media into their designs. The exhibit contained a variety of digital elements such as audiovisual media including a cartoon, a movie, two looping videos, a kiosk for exploring the state soils, a quiz game and a role-playing game (Megonial, et al., 2010, pp. 706-711). Along with digital media, the exhibit included scale models, commissioned sculptures, and actual soil monoliths (Megonial, et al., 2010, pp. 706-713). The exhibit also included a takeaway component in the form of an interactive website (Center, n.d.). This website extended the visitor's experience outside of the exhibit with features that include: videos, games, and interactive content (Center, n.d.; Megonial, et al., 2010). Kratz and Merritt (2011) believe that the use of multimedia is not only another way to present static information and curricula, but it can also create an interactive learning experience.

Technology has become the topic of interest for the future of museums and the "go-to solution" when finding a balance between education and entertainment. But technology, as the "go-to solution," eliminates the face-to-face human support network. Not all museums can justify, pull off or fund the latest technology in their exhibit spaces. Museums of history, for example, may find it more difficult explaining content via a large wall screen if placed in a

historic home. However, a unique feature of one category of historic museums could help bring balance to technology-heavy spaces.

Living History Museums

Living history museums abide by the same definition set by ICOM (ICOM. n.d.). However, the general agreement on what sets a living history museum apart from other museums is the way in which they present their narrative. Living history museums use human interpreters to relate information about the past. This interpretation can happen through what is known as first-person interpretation or third-person interpretation. In first-person interpretation, actors portray historical or fictionalized characters, based on known historical information, and present that information through the role the actor is portraying. In third-person interpretation, educators do not take on character roles. Instead, they interpret historical information from a contemporary point of view and may still engage in historical activities like their first-person counterparts (Craig, 2012 p. 30; Renzthog, 2007).

The participatory theatre experiences that living history interpretation provides, offers visitors a unique opportunity to experience static, historical material in a hands-on physical environment. A dissertation study done on the relationship between family groups and costumed interpreters in a living history museum found that families believed living history museum learning lets them “experience history through multisensory encounters” (Craig, 2012. p. 164). Interviews with the historical interpreters revealed that interpreters see themselves as educators and “believe visitor learning involves both education and entertainment” in which the aim is to find a balance between the two during their interactions with families (Craig, 2012. P. 164).

Programs Manager at the Denver Museum of Nature and Science, David Allison (2016), recounts in his book his early career experience at Conner Prairie History Museum and the advantages living history provides. He writes, “The real advantage of human-to-human

interaction at museums lies in the ability to make meaningful connections with visitors and build a rapport that will open the door to curiosity in a rich way. My favorite moments [in character] were always ones where, for at least a few moments, I was able to elicit some measure of empathy or compassion” (p. 24).

Not everybody agrees with this theatrical interpretation as a method of teaching. According to the Association for Living History, Farm and Agricultural Museums, (ALHFAM) “...critics argue that living history is antiquarian, idyllic, or downright misleading” (ALHFAM n.d.). Theatrical reenactments of the past, especially sensitive and personal topics such as slavery, receive the most criticism as such events usually are reconstructed to adhere to the audience’s level of comfort (Tyson, 2008). One critic argued: “There were gruesome things that happened to people... [black people], and there’s no amount of re-enactment that can help you understand the tragedy that slavery was” (Lewis, 2016). The ALHFAM website responds to critics by stating that the past cannot change but the interpretation of the past is always changing...

living history museums produce history just as teachers do in classrooms, authors do in monographs, and directors do in film...Yet, a site that incorporates historic objects, accurate environments and appropriate recreations can make the stories about the people who used those objects more multi-dimensional and effective. In the effort to "contextualize" their history, some sites try to recreate a particular time and place in the past, ignoring the intrusions of the present. The missions of various living history sites may make it difficult to be so exacting, but the effort to bring history to life is evident perhaps in living animals and plants, in staff performing historic work or trades, and in the effort made to provide an environment rich in artifacts that focus attention on life in past times (ALHFAM n.d.).

A living museum’s strong conviction to portray accurate history may make implementing modern technology difficult, but since visitors may have come to expect their museum experience to include a digital element, adding modern technology may be necessary. In a 2008 article, vice president of the Research Division at the Colonial Williamsburg Foundation, Cary

Carson, discusses the decline in interest and visitation trends of historic and house museum. He first theorizes that perhaps the historic museum is facing the same fate of any nostalgic trend, such as drive-in movie theatres, the circus or fad diets (2008). As Carson claims, "...nobody knows for sure what is going on...nobody believes that history museums are better off today than they were in, say, the good old days of Enola Gay and Disney's America" (2008. p. 11). Carson (2008) believes museums are forced to compete with entertainment zones and other educational centers along with numerous other audience agendas that get in the way of attendance. Another point Carson (2008) makes is the exhaustion of too many historic museums with all the same features such as seeing one spinning wheel after another. Carson's "plan B" focuses on making connections with the way today's learners prefer to organize information and put together meaning. Carson (2008) praises what interpretation-participation live actor experiences have brought to the table, but hints that the new technological interactions are not a bad option either, depending on the financial limitations of the museum. Plan B "...must embrace the reality that storytelling is the powerful medium in which modern learning takes place" (p 19).

Simply inserting modern technology into a historical site may create dissonance among the visitor, the interpreters, and the historical artifact. A large flat screen that displays information in a historic home does not depict the history of that home accurately. A project design team in Ireland tested an interactive digital prototype, called "Reminisce," at a living museum to help support meaningful visitor engagement (Ciolfi, & McLoughlin, 2012). The authors believe that interactive technologies can be designed with the identity of the museum and for the interests and preferences of visitors in the museum context (Ciolfi & McLoughlin, 2012). The prototype allows visitors to use their own phones, to listen to recordings of characters as well as record and share their own stories as it relates to their specific location in the museum

(Ciolfi & McLoughlin, 2012). This project was designed to extend human-computer interaction while being sensitive to the characteristics of living history museums (Ciolfi & McLoughlin, 2012).

Adding a narrative exploration of physical objects and the use of phone technology helped decrease the confusion and inaccuracy that a large screen technology would have imposed. The project strives to create deep connections where the visitor reacts to the display through discussion and activities, while also giving appropriate content and inviting visitor personal involvement (Ciolfi & McLoughlin, 2012). “Reminisce” shows how interactive design can be beneficial to living history museums by focusing on the material, narrative, and lived qualities of the site. Authors Mulholland and Collins discuss the growing trend of supporting visitor interactivity with active learning instead of passive learning (Mulholland & Collins, 2002). The authors argue that narrative is the best way to use technology in a cultural setting but that it also provides the best form of learning for multiple demographics (Mulholland & Collins, 2002). Using a narrative can be a helpful tool in human information processing. It can provide personal context clues that can reinforce information or provide triggers for short-term or long-term memory recognition.

The stories and narratives museums use as their foundation not only provide context and support for the design choices they make but also create an opening to explore, expand and acknowledge aspects of the human condition. Allison (2016) writes:

Stories are the fuel for the flame of human empathy and understanding. Our lives adhere to a narrative arc (we are born, we live in a place and time, we die) and narratives have the power to sculpt our perception of ourselves and others in profound ways...compelling stories compellingly told have been the benchmark for successful experiences at museums (p 24).

There is a tipping point that exists between education and entertainment: boring old school teaching techniques and flashy new activities. The factors that can cause an imbalance are associated with the different media used to present information: digital technologies and the “human support network.” Museums of any genre can benefit from a balance of both digital technology and the living history model of human interpretation but must take careful consideration of where, how, and why these media resources are being used.

CHAPTER 3: METHODOLOGY

This comparative study applied a mixed-methods approach using participant observation, surveys and semi-structured interviews intended to measure museum experience and multimedia interaction. Two research phases were conducted for this thesis. The first research phase consisted of two research groups that represented common demographics of museum visitors: adults and fourth-grade students. These participants were taken to the Conner Prairie living history museum in Fishers, Indiana where they experienced three exhibits representing the different media of study. The second research phase consisted of interviews with experts in the field of museum design and museum interpretation. These interviews were intended to gain a holistic perspective on visitor engagement.

Ethnographic Research

This thesis uses qualitative methods to study human-human interaction, human-computer interaction and the relationship each has on the visitor's experience. Ethnographic research is a form of qualitative research that looks at a large culture-sharing group (Creswell, J. 2013). For this study, participants represented the culture group of visitors as they experience museum exhibits. This research takes the realist ethnographic approach that is used by cultural anthropologists (Creswell, J. 2013). In a realist ethnographic approach, the researcher attempts to report on the observations of the participants while remaining neutral and focuses on narrating the facts (Creswell, J. 2013).

Despite requiring neutrality, researchers too, are human. According to Zohrabi (2013), there are three main drawbacks to observational studies. These are reactivity, observer bias and information recording (Zohrabi, M. 2013 p. 257). Reactivity refers to the participants reacting differently due to the presence of an observer; observation bias refers to the researchers' own

viewpoints and backgrounds affecting what they see, and information recording refers to the length of time between observing and taking down notes (Zohrabi, M. 2013 p. 257-258).

Research Design

Observations

Observations were used to acquire direct notes on how visitors experience exhibits in the natural setting of the museum. Participant observations involve the researcher observing participants in the environment that is being studied (Creswell, 2003). Most of the data gathered in observations fall under qualitative data, however, numerical data may also be acquired such as average length of time for participants to achieve their goals (Bernard, H. 2011 p.257-258). Observational data are records of firsthand events and aids in gathering context to support interview and survey data (Zohrabi, M. 2013, p. 257).

Survey

Participant surveys were used to gather quantitative data. Using surveys alongside interviews and observations can “supplement each other and hence boost the validity and dependability of the data” (Zohrabi, M. 2013, p. 254). The surveys in this thesis, used the Likert rating scale, with a measurement of 5 points. Each survey statement is based on the Likert rating scale from *strongly agree* (5), *agree* (4), *neutral* (3), *disagree* (2) and *strongly disagree* (1). The purpose of using Likert coincides with Likert’s interest in “measuring internal states of people (attitudes, emotions, orientations)” which are “multidimensional” and complex frames of thought (Bernard, H. 2011. p. 245).

The surveys are loosely based on the Museum Experience Scale (MES) and the Multimedia Guide Scale (MMGS) (Othman, 2012). Since the MMGS scale is based on a single multimedia guided tour, the statements were adapted to incorporate multiple digital tools around the exhibits. To aid in measuring human interpretation, questions were adapted from the

multimedia statements to measure the engagement of visitors with the human interpreters. Each statement was created to aid in measuring participants attitudes regarding their experience within each of the three exhibits (See appendix A).

Semi-Structured Interviews

Many interviews occur face-to-face between the participant and the interviewer. (Gubrium & Holstein, 2002). Semi-structured interviews were conducted with participants in order to discuss museum-related topics with flexibility and without restrictions (See Appendix B & C). The flexibility of semi-structured interviews allows for open-ended questions and does not limit the participant's responses (Gubrium & Holstein, 2002). The interviewer may rely on both pre-written questions and cues to guide the interview process towards the area of discussion. Newly formulated questions may also be asked to help participants elaborate on the open-ended question, thereby gathering more in-depth qualitative data (Srivastava, A., & Thomson, S. B. 2009).

Research Site

Conner Prairie is a Smithsonian affiliated and nationally recognized living history museum (About Conner Prairie - Conner Prairie. n.d.). The museum's narrative focuses on Indiana history with exhibits spanning across 100 acres, that highlight different times throughout the 19th century (About Conner Prairie - Conner Prairie. n.d.). Each point in the historic timeline features living history interpreters that interact with visitors using first- or third-person interpretation techniques. (About Conner Prairie - Conner Prairie. n.d.).

The Exhibits

Of the multiple areas to visit, at the museum, three exhibits were chosen based on the media that is used. These media are referred to as human interpretation and digital technology. The media of physical objects (signs, tangible items and artifacts behind glass) are incorporated

into all exhibits. In the first exhibit, participants could engage with a member of the museum interpretation staff, who acts as the primary form of visitor interaction. This interpreter acted in third-person narration. In the second exhibit, participants could engage with multiple forms of digital technology. In the third exhibit, participants could engage with human interpreters (acting in both first and third person) and multiple forms of digital technology. The three exhibits: Animal Encounters, William Conner House and Civil War Journey, met the criteria for featuring these media.

Exhibit One: “Animal Encounters Barn” - Human Interpretation

The Animal Encounters barn features up-close interaction with small livestock animals, in a historic 1840’s barn. Visitors may freely engage with the animals under the supervision of third person Agricultural interpreters and are encouraged to ask questions relating to the animals and historic and modern farming. The barn also includes a small box where visitors may explore parts and products of the animals, and physical signage relating information about agriculture. There are no digital features included in the barn (Animal Encounters - Conner Prairie. n.d.).

Exhibit Two: “William Conner House” - Digital Technology

The William Conner House is a two-story, 195-year-old historic home with five rooms visitors can explore. School tour visitors may only visit the three rooms on the first floor of the house, due to a concern for traffic flow and preservation of flooring. However, any visitor who has a phone with QR code access may take a virtual tour of the upstairs rooms. Before a 2016 renovation, the Conner House relied heavily on the third person and physical object interpretation to present the narrative of the house. After the renovation, the house includes seven digital devices: touch screens, a motion sensor screen, and a projector displaying images and music along with numerous physical objects. Third-person interpreters tend to the house, digital

and artifact displays while offering information or answering visitors' questions. (William Conner House - Conner Prairie. n.d.).

Exhibit Three: "1863 Civil War Journey" – Human and Digital Media

Civil War Journey is a reenactment of a day in the southern Indiana town of Dupont in 1863, following a raid by a band of Confederate soldiers. The town includes a covered bridge with voiceover relating narrative and battle sound effects, a motioned sensor voice associated with a civil war dressed mannequin, three buildings that include various digital features such as sound effects, theatrical rigged systems, projected moving images and touch screens. Two of the buildings contain staged experiences that visitors may visit on running times. One experience implements living interpreters in a theatrical scheme while the other plays a recorded movie. The quartermaster's station holds two touchscreen interactives. Other buildings that do not include digital elements are a doctor's infirmary and a soldier's campground. Visitors may interact with both first and third person interpreters. (1863 Civil War Journey - Conner Prairie. n.d.)

Participants

To understand the museum visitors' experience, two research phases were conducted with a total of 54 participants. The first research phase was conducted with a total of 45 participants. Eleven of those participants were adults while 32 were fourth-grade students with two teachers. These participants were observed in the three exhibit spaces and completed surveys and interviews based on their experience (see Appendix A and B). The two teachers did not complete the survey but were interviewed for their opinions about the museum experience from the teacher's perspective. This first research phase was focused on understanding the museum experience from the perspective of the visitor.

The second research phase was conducted with nine participants. Five participants were museum interpreters while four were museum exhibit designers. These participants were only

interviewed about their own expertise and opinions regarding their museum roles (see Appendix C). This second research phase was focused on understanding the museum experience from the perspective of the museum.

Procedure

The research procedure for adult and student participants were similar in structure. Both groups completed identical surveys (see Appendix A) but the interview procedures for groups were conducted differently. Adult participant interviews were conducted at different times, in groups of three to four people whereas the student interview was conducted at one time in a group of 15. Interview questions were designed to engage in similar conversation topics (see Appendix B). However, because the semi-structured method creates flexibility, participants were free to discuss their experience without limitations. Museum expert interviews were scheduled around the availability of the participant. Two sets of interview questions were created based on the participant's field of expertise: museum exhibit designer and museum interpreter (see Appendix C). All participants were voice recorded during the interview phase of the research. Video recording did not occur within the exhibit experience to respect the privacy and negate any potential discomfort or intrusion on non-participant visitor's experiences.

Data Capture and Analysis

Observations

Observations were hand recorded in the field, transcribed and saved in a computer file. Notes recorded include participants actions within each exhibit, comments participants made and time each group spent in the exhibits.

Survey

The 15 survey questions for Exhibit One: human interpretation and Exhibit Two: digital technology were grouped into three broad categories for both adult and student participants. The

categories are as follows along with the question groupings (See appendix A): Interest: Q1-8, Q12; Understanding: Q9-11; Engagement: Q13-15. The 20 survey questions for exhibit 3 were divided differently as the third survey contain questions for both human interpretation and digital technology (See appendix A). The division of how questions were measured are as follows: Interest: Q1-8; Understanding: Q10-14; Engagement: Q9, Q15-20.

Each category was calculated to find the proportion participants agreed with each statement. Due to the smaller sample size of adult participants, some adjustments were needed in order to match the calculations of the student participants. This adjustment is based on Wilson's adjustment of sample proportions (1927). For each adult question, if the agree or disagree count falls below two proportions, the agreed was adjusted by adding two counts. No adjustment was made for student questions. Then for each of the surveys (human interpretation, digital technology and both human and digital) the combined proportion of the categories of interest, understanding, and engagement, were taken and calculated based on participants level of agreement to the question.

Interviews

Interview data were analyzed through the methods of coding and affinity diagrams. Coding is a method used to compare and piece together qualitative data so that groupings or categories with subcategories may be formed (Kolb, S. M. 2012). By analyzing these categories, overarching themes may appear to the researcher (Kolb, S. M. 2012). Affinity diagramming is a design thinking strategy used by user experience researchers and designers. The affinity diagram process aids in organizing large quantities of data by establishing hierarchies, identifying themes and their connections to each other (Weprin, M. 2016). Using an affinity diagram is beneficial when analyzing a large collection of data, as the establishment of thematic hierarchies can help eliminate unsupported data thereby laying the groundwork for data analysis.

Limitations

While the study design of this research helped provide some insight into the museum visitor experience with human and computer interaction, some limitations prevented a more scientifically sound approach. The first limitation was the lack of complete control over the field research environment. Manipulation of three large and permanent exhibits would have taken up valuable time and resources. Future studies might consider testing visitors on a single, smaller exhibit that would lend itself to easily change media around a single narrative. Studying visitor experience on a single narrative would create a control that would reduce factors such as personal interest biases. Another limitation was the time of year when the study took place. Like many open-air museums, Conner Prairie closes its outdoor grounds during the winter season. This reduced the amount of time that could be spent taking participants around and gathering more data. A lengthier study would accumulate more participant data and could include follow up interviews with participants. Finally, the small sample size of participants did not permit any statistical significance for quantitative results. However, quantitative data did permit potential hypothesis for future studies that could be supported by statistical data if the sample size was significantly increased.

Biases

The inspiration for this thesis began with my own experience working as an interpreter at Conner Prairie. Having an interest in exhibit design, I began to reflect on how the exhibits on the prairie grounds provide and display narrative content on different media. My own bias is a result of my deep connection and experience working in the museum. Before this thesis, I was against the seemingly massive wave of change the digital technology trend appeared to bring into the museum world. It was hard for me to understand the value digital technology could bring to an exhibit.

It wasn't until I started observing and listening to my participants that I began to understand the relationship visitors had with the different media in the exhibits. I was humbled to witness the appearance of things from the visitors and other museum experts' perspectives (see research phase chapters). I could not have reached any conclusion without starting with my bias. However, I have done my best to keep the study and analysis of this research neutral. I hope the reader can take from this thesis what they will, reach their own conclusions and perhaps take inspiration into their own research on visitor experience.

Generalizability

The research and analysis of this thesis are directed specifically toward the field of museums. However, studying the relationship between visitors to human interpreters and digital technology in the same environment can be generalized to any place that creates this interaction. Places such as schools, retail markets, and customer service could benefit from studying their visitor's experience by focusing on all the different media their visitors interact with.

CHAPTER 4: RESEARCH PHASE ONE: RESULTS AND DISCUSSION

Introduction

The first research phase was focused on understanding the museum experience from the perspective of the visitor. The research was conducted with 45 participants that resembled typical demographics of museum visitors: adults and fourth-grade students. Participants were taken in groups to the Conner Prairie Living History Museum where they experienced three exhibits representing the different forms of media interaction. Exhibit One: Animal Encounters represented the medium of human interpretation. Exhibit Two: William Conner House represented the medium of digital technology. Exhibit Three: Civil War Journey represented both forms of media interaction. Participants were observed in the field, completed surveys, on each of the three exhibits and interviewed in a semi-structured method. Observational notes reveal the researcher's eyewitness of participant behavior, dialogue and time spent within each exhibit. Survey results discuss participant attitudes towards each of the three exhibits based on the experience themes of Interest, Understanding, and Engagement. Interviews reveal more in-depth attitudes of participants towards their experience. Topics that appeared in interviews include a comparison of human interpretation, digital technology, and a third form of media physical objects, what visitors look for in their experience and defining educational and entertaining experience. By studying the visitor's experience, the relationship they have with the different media of the exhibit becomes apparent. Through this relationship, the media of human interpretation, digital technology, and physical objects reveal their roles in providing an educational and entertaining experience.

Research Design

Observations

Observations were hand recorded in the field, transcribed and saved in a computer file. Notes recorded include participants actions within each exhibit, comments participants made and time each group spent in the exhibits.

Survey

Participants completed a survey after visiting an exhibit. The surveys were loosely based on the Museum Experience and Multimedia Guide scales by Othman (2012). The adapted statements were created to aid in measuring participants attitudes about their experience within each of the three exhibits. Survey data was analyzed by finding the probability value of participants level of agreement towards questions measuring their interest, understanding, and engagement with the three exhibits.

Interview

Semi-structured interviews were conducted with participants after all exhibits were visited in order to further discuss their experience. Interview data were analyzed through the methods of coding and affinity diagrams. Several commonalities were revealed during the analysis of transcripts and will be discussed in the findings section of this chapter. Topics that appeared in interviews include a comparison of human interpretation, digital technology and physical objects, what visitors look for in their experience and defining educational and entertaining experience.

Participants

In the first study, participants represented the most common museum visitors based on the demographics of social groups. These social groups are adults and school tours. This demographic is a typical research category used by museums to study and understand their visitors (Falk, J. H. 2006a). Though families with children under the age of 18 were considered and can provide useful data, they were not used in this study. Families with children are a widely

researched area of study in the literature, but little research goes into adult visitors without children. This study hopes to provide more insight into the adult museum visitor.

Participants were not chosen from visitors already at the museum. This decision was made because these visitors could already have predetermined goals and motivations for their museum trip. Because the study required participants to only go to three exhibits, visitors would need to alter their plans, which could affect the outcome of their experience. Instead, participants were selected based on their interest to participate in this study.

The adult group contained a total of eleven adults, ranging in age between 18 to 70. Adult participants partook in the study in four separate groups with two to three people per group. The group size was determined by the availability of the recruited participants. Participants in each group were also somehow socially related to each other. This means that groups contained family members, friends or mixtures of both. Having groups, such as these, helps create a more realistic research environment.

The school tour group contained a total of 32 fourth-grade students with two teachers and four chaperones. Student ages ranged from 9-11 years old. Fourth-graders were chosen based on the relating genres of both the museum and the standards of education set for fourth-grade Indiana students. Conner Prairie is a museum focused on Indiana history. According to its mission statement, the museum “inspire(s) curiosity and foster(s) learning about Indiana's past by providing engaging, individualized and unique experiences” (Driven by Our Mission - Conner Prairie. 2018). This statement coincides with the 2016 Indiana Department of Education: Indiana Academic Standards Resource Guide for grade four. According to the document, the first standard, in history, for fourth-grade students is to “trace the historical periods, places, people, events and movements that have led to the development of Indiana as a state” (McCormick, J. 2016).

It is to be noted that despite placing participants into social categories, the researcher recognizes that participants had their own unique experience that was influenced by other measurable and immeasurable factors. Therefore, museum visitor identities may be able to provide insight into the types of people visiting. However, Falk writes: “The fact is that the museum visitor experience is not readily captured with tangible, immutable categories. The museum visitor experience is much too ephemeral and dynamic; it is a uniquely constructed relationship that occurs each time a person visits a museum. And the same person can visit the same museum on two different days and be an entirely DIFFERENT visitor” (Falk, J. H. 2006 p. 109b). If the same participants were asked to reenact this study, now or in the near or late future, it is quite possible that their experience results could be quite different, based on numerous contributing factors.

The following table provides further detail on participant groupings as well as their abbreviations used in the following pages. Adult chaperones were not studied in this thesis.

Groups	Participants	Abbreviations	Gender and Ages
Adult Group 1	Participant 1	P1	Male (18-20)
	Participant 2	P2	Male (30's)
	Participant 3	P3	Female (30's)
Adult Group 2	Participant 4	P4	Male (60's)
	Participant 5	P5	Female (60's)
Adult Group 3	Participant 6	P6	Male (20's)
	Participant 7	P7	Female (20's)
	Participant 8	P8	Female (20's)
Adult Group 4	Participant 9	P9	Male (60's)
	Participant 10	P10	Female (60's)
	Participant 11	P11	Male (20's)
Teacher Interviews	Teacher 1	T1	Male (50's)
	Teacher 2	T2	Female (20')

School Group 1	Number in Group: 6		Males and Females (9-11)
School Group 2	Number in Group: 7		
	<i>(included two adult chaperones)</i>		
School Group 3	Number in Group: 6		Males and Females (9-11)
School Group 4	Number in Group: 7		
	<i>(included two adult chaperones and T1)</i>		
School Group 5	Number in Group: 7		Males and Females (9-11)
	<i>(included T2 and the researcher)</i>		

Table 1: Participant Groupings

Procedure

Prior to participants arriving at the museum the appropriate museum staff, were given a briefing on the procedures as well as a chance to ask the researcher questions. Interpreters stationed at the three exhibits were given a more in-depth briefing about their roles in the study. Interpreters in Exhibit One: Animal Encounters and Exhibit Three: Civil War Journey were asked to continue with their normal daily activities. Interpreters at Exhibit Two: William Conner House were asked not to engage with participants unless they were approached first. The reason behind this instruction was to highlight the digital technology in the house as the primary media. If guests did seek out human interpreters, this could be interpreted as a need or desire for a human to human interaction. Both adult and fourth-grade student participant groups were observed in the three exhibits, completed the same three 15-20 question surveys and partook in a semi-structured interview.

Observations of all participants began as soon as they stepped foot on the exhibit grounds. Each exhibit experience was timed by the researcher starting when the group first entered the exhibit and ending when they indicated to the researcher that they were finished. Where all adult groups were able to be observed by the researcher only one group of students

could be observed. The four groups of adult participants were able to experience the exhibits at different times and different days in groups of two-three. They were also given the option to decide the order they wished to experience the exhibits. This choice was given to simulate a more realistic situation of visitor motivations and free choice exploration.

Unlike adult participants, the fourth-grade students had to experience the exhibits all on the same day. Due to the larger size of the group the researcher needed to divide student participants into smaller groups. These groups rotated between the three exhibits to help reduce the number of student participants per exhibit. See table two (below) for the student’s field trip schedule. Students were divided into five groups with six to seven students per group (See table one for participant groupings). This structured schedule was a loose guide for groups to follow in order to simulate a field trip experience, provide students with breaks such as restroom and lunch as well as figure in arrival and departure times and travel time between exhibits.

Student Field Trip Schedule		
Time	Group	Location
Group 5 was observed by the researcher for the day		
10-10:45	1 and 2	Exhibit 1: Animal Encounters
	3 and 4	Exhibit 2: William Conner House
	5	Exhibit 3: Civil War Journey
10:45-11:00	Take Survey and travel time	
11-11:45	1 and 2	Exhibit 2: William Conner House
	3 and 4	Exhibit 3: Civil War Journey
	5	Exhibit 1: Animal Encounters
11:45-12:00	Take Survey and travel time	
12-12:30	Lunch and Break	
12:30-1:15	1 and 2	Exhibit 3: Civil War Journey
	3 and 4	Exhibit 1: Animal Encounters
	5	Exhibit 2: William Conner House

Table 2: Student Field Trip Schedule

After visiting an exhibit, both adult and student participants were given the same three survey’s containing 15-20 statements about their experiences. Lined paper was also given to participants so they could record any thoughts, notes or feelings they had about the exhibits. Finally, after all three exhibits were visited, participants sat down with the researcher for a 45 to

an hour-long semi-structured group interview. These interviews were voice recorded and later transcribed. After the interview participants were finished with the study.

Adult interviews followed a standard procedure where the researcher would ask a question and participants verbally responded. However, a different procedure was needed for the student participants as only fifteen of the 32 student participants were able to be interviewed for the study. Even with the reduction of participants, the large number still created a challenge for standard interview procedures. Therefore, an alternative procedure was implemented to allow for a large interview size.

In a single 40-minute interview the researcher implemented an altered version of a design thinking method to aid in gathering the most data from a large group. The design thinking method used is called saturate and group (Plattner, H. 2010). This method helps in large group data collection by allowing more verbally prone students the chance to express their opinions but also allows for students, less inclined to verbalize their thoughts, the chance to provide their answers in written form. In this way, all individuals in the interview can feel like they contributed. Before the interview started, each student was given a stack of Post-it notes. When a question was asked students could either raise their hand to answer, write their answer on the Post-it note or both. The researcher acted as a facilitator to the discussion. Once a question had been thoroughly discussed, the teacher helped the researcher collect and organize the post-it notes into piles for later analysis (See Appendix D).

Interviews were also conducted with the two fourth-grade teachers in order to get their perspective of what teachers look for in a museum and how they connect field trips with their classroom education (see Appendix B). This concluded the field trip research.

Results

Observations

Observations revealed some insights for understanding the relationship between visitors, human interpreters, and digital technology. Though physical objects were not initially chosen as a media to focus on for this study, participant observations and interviews demonstrated that enough attention was paid to them by participants to include in the results. The observations are used to help compare the different forms of media to one another and how they affect the visitor's experience. Participants were observed interacting with human interpreters, digital technology and physical objects.

While all participants were seen initiating the first contact with digital technology and physical objects, less than half of the adult and student participants initiated the first contact with human interpreters. Any engagement between a participant and the interpreter was usually first initiated by the human interpreter. Interactions, where the first contact was made by the interpreter, occurred mostly in Exhibit Three: Civil War Journey. There were some instances when the first contact by interpreters was made in Exhibit One: Animal Encounters and little to no contact with interpreters in Exhibit Two: William Conner House. These first contact experiences usually began by the interpreter asking the group questions.

Most adults appeared to be more comfortable interacting with the interpreters. Adults who were unsure about interacting with interpreters made comments such as "what questions would I ask them?" (P6) whereas even students who appeared comfortable around the interpreters would first seek permission, approval or guidance from their teacher before further interacting with the interpreters.

When interacting with technology every group encountered one or more of the technology pieces not working. Adult participants had mixed experiences using the technology in Exhibits Two and Three. For instance, in Exhibit Three: Civil War Journey, P2 and P3 played a game on an interactive table. After playing the game P2 and P3 made comments on how slow

they thought the interactive was. After P9 played the same game he appeared impressed by the experience making the comment “modern gameplay for historical purposes” and asking where he could get a copy of the game.

In one unique experience, P6 attempted to interact with one of the digital interactives in Exhibit Two: William Conner House. Very soon after starting, a medium size group of younger children with their adults entered the room. Without hesitation, a smaller group of girls approached P6 and asked him what he was doing. This interaction ended with the group of girls quickly pushing P6 away from the interactive. In another room, P6’s group engaged with the different physical objects and technology for a time but then moved on when the group of children entered the room. In a third space of the exhibit P6 and his group engaged with another digital interactive screen. They made comments on how they are having trouble with it not responding to their touch. They also noticed that if they were to tap on one thing and read the content, tapping on a different thing would produce the same content as before. The group does not spend too long at this interactive as the same group of children pushed them away again. This experience was later recalled by P6 in the interview as negative.

When a technology piece was surrounded by another group, student participants would bypass the experience while adult participants would sometimes engage with another element in the exhibit before stepping in after the person before them. When technology was available, students would step in and interact. When the student group interacted with a touch screen in Exhibit Two, they spent some time trying to figure out how to navigate through the experience. When the group activated the sound many of them moved in so close, they were no longer facing the screen. Shortly after, the group left the interactive. When asked why they had not stayed to watch the remaining content one girl stated that it was “too hard to figure out.” In another room, the group gathered at another touch screen when one of their classmates exclaimed that the

content was related to what they were learning about in school. The group with their teacher, explored the touch screen, discussed the content, and related it to what they had learned or were going to learn in their next lesson.

A couple of adult participants jokingly pointed out the historical inaccuracies of the digital technology within the exhibits. While in Exhibit Two: William Conner House, P6 pointed to a projector in one of the rooms saying to his group mates “That’s not historically accurate.” P6’s group also made comments on an interactive telegraph in Exhibit Three which when tapped would display telegraphic text onto a tablet screen. The group played with the interactive for a short time before giving up. Saying comments such as “this does not really teach me how to do it” and “this is more sensitive than the real thing.” The group proceeds to another corner of the room where they spend more time trying on soldier outfits and garments while taking pictures of themselves with their cell phones.

The participants own technology was used in various ways. Participants would use them to take photos of exhibit pieces to remember for later (P1; P2; P11), take photos of themselves or other group members (P7; P8) look up information that they didn’t know/understand or wanted more information on (P1; P2; P9; T2). After visiting the final exhibit P6 made the following comment: “I didn’t look at my phone once. I usually do that when I’m bored or uncomfortable.”

Physical objects like the soldier clothes appeared throughout the three exhibits. When presented with the options of a tangible object or digital technology more participants appeared to gravitate to and spend more time with the tangible objects. These objects included boxes that contained scents, puzzles, garments, and boards or flaps that could be flipped to read content. Physical objects paired with human interpreters such as the live animals in Exhibit One or the medical instruments in Exhibit Three acted like a hook that pulled participants into a conversation with the interpreter. Physical objects paired with digital technology (Exhibit Two

and Three) drew less attention as these experiences usually involved digital content on a timed loop. Participants would either not stay to watch the content or stayed through multiple loops.

When the object was a sign with text, participants would spend different amounts of time reading or scanning the content. In each of the four adult groups, there was at least one person who would stop to read the entirety of the text. There were also adults who did not read any text unless prompted to do so by another member of their group. Signs that included questions appeared to prompt more conversation between group members over signs that included only narrative content. Student participants would bypass any text-heavy signs and gravitate towards signs laden with more graphics. Students and adults were inclined to interact more when things appeared to involve activity such as interpreters performing tasks, or digital screens and physical objects that appeared to be more manipulatable than pressing a button. Times, when students would read the text, was when they were prompted to by their teacher usually in response to a question asked or in an attempt to get the student engaged with the content.

Many adults and student participants responded negatively to the mannequin dolls placed around exhibit 3. In almost all groups, one or more participants became startled (P1, P5, P10) or scarred (P7, P8,) by the voice-activated mannequin who is stationed near the entrance of the exhibit. Upon seeing the wax figures in a house P7 said: "I don't like wax figures. I want real people here." P10 also made a comment about how she would rather have "more of the interpreters" instead of the wax figures.

Times were recorded for the estimated amount of time each group spent in the three exhibits. The average time spent in the exhibit is as follows: Exhibit One: Animal Encounters 13.8 minutes; Exhibit Two: William Conner House 29 minutes; Exhibit Three: Civil War Journey 51.3 minutes. Adult participants spent relatively more time in Exhibit Two and Three

while student participants roughly spent a few more minutes in Exhibit One than the adult participants.

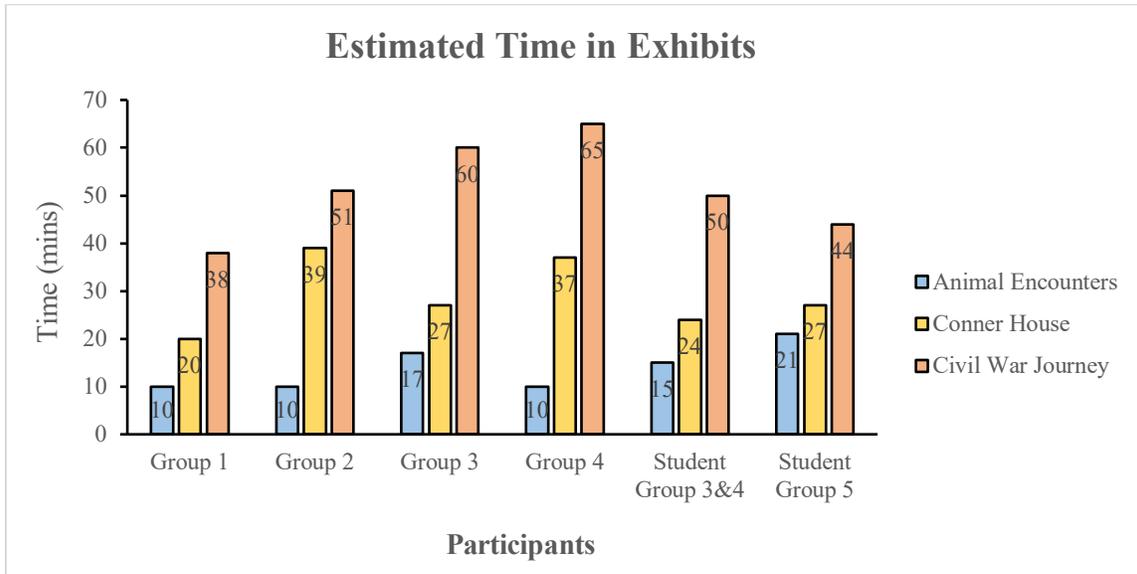


Figure 1: Time spent in exhibits

Survey

Survey results were divided into three categories based on participants level of agreement that an exhibit provided them interest, understanding, and engagement. Each of the three exhibits were compared to one another based on these categories to help determine which exhibit visitors prefer: Human vs Human/Technology; Human vs Technology and Technology vs Human/Technology. P-value was calculated to help determine the probability of the results supporting a claim. In this instance what is the probability that one exhibit was preferred over another? If the p-value is less than or equal to 0.05 the results indicate that there is a significant difference in how the different media affect the participant's interest, understanding, and experience. If the p-value is greater than 0.05 the results indicate that there is no difference in how the different media affect participants' interest, understanding, and experience. If the p-value is close to 0.05 it is probable that the claim could go either way.

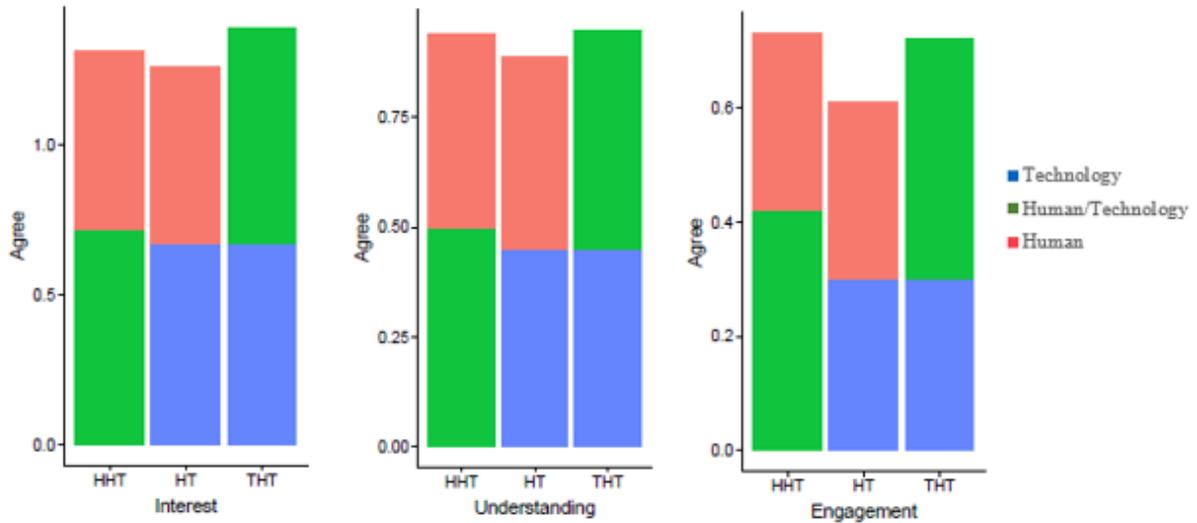


Figure 2: Adult Participant Bar plots – Column 1: Human vs Human/Technology; Column 2: Human vs Technology; Column 3: Technology vs Human/Technology

When comparing Human vs Technology (Exhibits One and Two) in adult surveys, there appears to be equal agreeance on all three categories (see figure 2). When looking at how Human/Technology (Exhibit Three) compares to Human (Exhibit One) and Technology (Exhibit Two) it appears to receive slightly more agreeance in each of the categories.

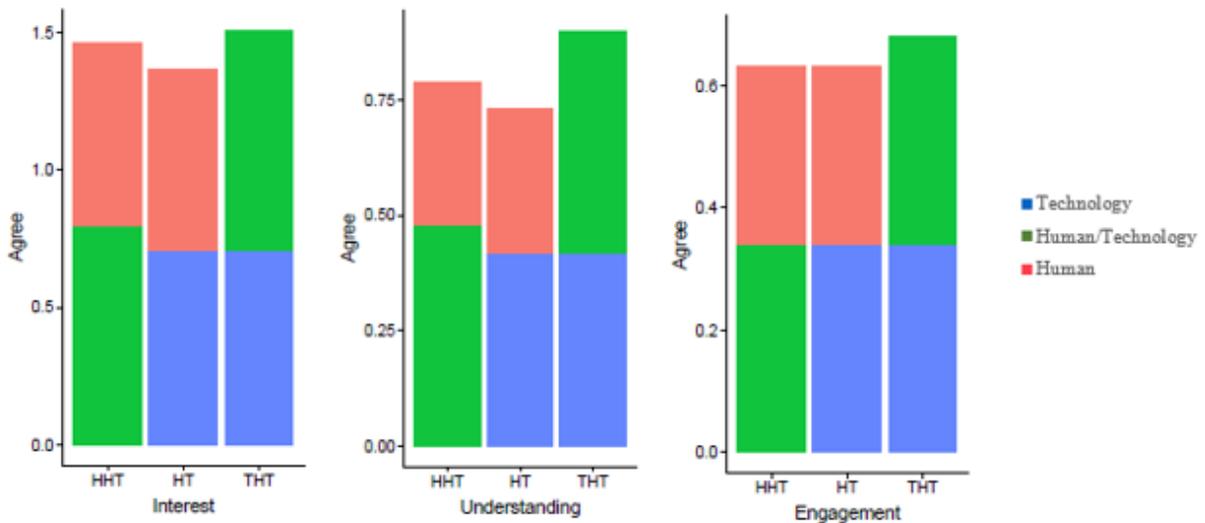


Figure 3: Student Participant Bar plots - Column 1: Human vs Human/Technology; Column 2: Human vs Technology; Column 3: Technology vs Human/Technology

In student survey results (see figure 3) the Human/Technology (Exhibit Three) also appears to receive slightly more agreeance across the three categories. In the interest and engagement categories, the Human (Exhibit One) and Technology (Exhibit Two) appear to be in equal agreeance. However, in the understanding category Technology (Exhibit Two) appear to be in slightly more agreeance when compared to the Human (Exhibit One).

Based on these results both the adult and student surveys would indicate that participants believed the Human/Technology (Exhibit Three) provided slightly more interest, understanding, and engagement. When comparing Human (Exhibit One) and Technology (Exhibit Two) results would indicate that adult participants believed that these media provided the same amount of interest, understanding, and engagement with Technology (Exhibit Two) providing slightly more understanding than Human (Exhibit One) to student participants.

Despite these results, all p-values are greater than or close to 0.05 (See Appendix D). This indicates that there is not enough evidence to support if participants prefer one media over another. Larger sample size would help increase the probability towards participant preference of exhibit interest, understanding, and engagement.

Interview

Interviews revealed more in-depth insight into the participant's thoughts towards their relationship with the media of human interpretation, digital technology, and physical objects as well as how these different forms of media provide education and entertainment. Topics that appeared in interviews are derived from the comparisons between human interpretation, digital technology, and physical objects.

Participants gave many responses to how they viewed the role of a human interpreter in an exhibit. In the teacher interviews, both teachers believed that the main role of interpreters is to provide enhancement and detail to content.

To me the human interpreters are...I guess I would look at them for more enhancement, but I guess I would look at them for much more detail. And to be able to really speak in detail about what's going on there. And quite frankly I would rather talk to a person about what is going on there than look at the technology. (T1)

When asked how she saw the interpreters positively or negatively affecting students' abilities to learn about subjects Teacher 2 said:

Positively I feel like they can answer the questions a little more detailed and give them more information. Negatively if they don't know their stuff. If they are having an off day, they can't recall everything. Maybe that might impact them negatively if they are like stumbling over their stuff.

Adult participants expressed similar statements about the interpreters. Many adult participants believed that human interpreters are there to help people understand the exhibit content better (P1, P2, P4, P5, P9, P10). For example, P1 stated that usually, museums don't have interpreters or if they do, they "are just there to say, 'don't touch that'. You hope that if you have questions about what you're not supposed to touch that they have some knowledge about it, and they can help you understand it." This type of interpretation "makes it more hands on, more experiential based learning" (P1) or "the humans make it more of a journey" (P2). Referring to Exhibit Two: William Conner House, Participants 4 and 5 stated that when they visit historic places, they enjoy a "presentation of what's going on or what you can expect in each room." (P5) "That type of interpretation is always helpful because they know stuff that you're not going to pick up from the exhibit or..." (P4) ... "or maybe you might just go by and miss it. They usually tell you to look for this or look for that" (P5).

The researcher wanted to further explore what participants meant when they said human interpreters could provide more detail about the exhibit content. Participants 9, 10 and 11 had the most elaborate discussion about this topic. P9 and P10 discussed how interpreters were better able to elaborate with subjective information such as a person's personal feelings, thoughts, and

opinions. P11 believed that digital technology could just as easily answer questions as a human. However, P11 did state that the human interpreter was “good for a personal experience. A lot more interactive, I guess. You have real conversations.”

Participants also provided examples of when and why they wouldn't want human interpretation. Participants 1, 3, and 6 stated that sometimes they didn't want to interact with the interpreters. The reason varied from wanting the option to have the experience on their own or have a tour guide (P3, P4, P5); not being comfortable talking with the interpreter (P1, P6) or not knowing how to interact with them (P6 and various students). Participants 7 and 8 discussed how they themselves were not uncomfortable with the interpreters but that they could see how others might be. The following conversation between P7 and P8 specifically refers to their experience in Exhibit Three: Civil War Journey.

P8: ...there was a villager or someone before we got into the civil war section and she was walking around, and I could tell she was trying to like make her way to the children to say hello. But I do feel like that could be a little uncomfortable or just a little scary cuz this person is coming out of nowhere and you don't know who they are.

P7: I was just a little sad there weren't more characters around because I feel like as a kid...like I would bring my kid here to have those awkward interactions I guess to learn how to talk to other people rather than okay we're going to a museum and you're not gonna discuss with anyone. Here it's almost like...you get to ask questions to other people and having a conversation by learning rather than just looking.

P6: Yeah. Learning through conversation.

When asked to discuss the media of digital technology in a museum, participants also saw it as another way to enhance the exhibit content (T1, P11). T1 also stated that while the physical objects can “speak for themselves” the digital technology is able to provide a lot of extra information. T2 believes that technology can provide her students with the ability to “learn different things in different ways and at their own pace.” One student pointed out that they

thought that the technology helped “because if you don’t like going up to people...and asking them questions...you can find it out without asking someone and you don’t have to speak.”

The technology was also seen to draw in and keep people engaged (T1, P5). For some participants this attraction and engagement were appreciated in exhibit 3: Civil War Journey but less appreciated in Exhibit Two: William Conner House. T1 and P7 expressed similar thoughts on how technology (specifically in Civil War Journey) was able to portray events that would have been difficult or costlier to perform in real life. Digital technology can provide “the drama and feeling of war” (P7, P9, P11). P11 expressed how the theatrical style of Exhibit Three was enhanced using digital technology and “made everyone pay attention.” However, in Exhibit Two he could be “watching one thing and the whole entire room could be talking at the same time.” Participants also expressed how they saw digital technology as inaccurate to the historic environment around them (P6, P7, P10). P7 stated:

I don’t know...when I was a kid, I loved Conner prairie like I loved walking around and it was so cool getting to be integrated into how it was back then and now it’s like oh that’s not really back then cuz there’s a tv screen right there. Like (before) I felt like I was in the 1800s rather than just learning about the 1800s. It feels less natural because of technology.

Finally, participants expressed their opinions about engaging with physical objects within the exhibits. Participants stated that they appreciated the “hands-on” approach and the “realness” to many of the objects (P1, P3, P6, P7, P8, various students). What many participants liked about the physical objects was that they were things you “don’t really get to see every day” (P1, P2, P3, P6, P7, P8). When asked to compare being in school and on a field trip one student stated:

I think in school, if we were talking about the same subject, like Conner Prairie, you wouldn’t really be going around and seeing as much so you probably wouldn’t be as interested in it as you would if you saw the things in real life and you were going up to it and getting into it more.

Another student wanted to clarify that her desire to interact with the “realness” of an object depended on what that object was. The example she gave was “a poisonous snake.” For her, seeing a picture of the snake was “safer” to interact with in the school than in real life. Whereas another student mentioned that if given the option of a picture of a goat or the “real thing” she would want “the real thing” because “if you were wondering what a goat felt like you could know what a goat felt like and if it was a different type of goat and you were wondering there could be a different color type of goat you would know what it was.”

The media of technology is something participants are used to because they have it in their daily lives (P1, P3). When discussing the field hospital in exhibit three participants 6, 7, and 8 liked having the physical medical tools presented to them by the interpreter. The group said:

P7: ...like there totally could have been a video being like “this is the tool that you cut a bone off with” and this is...

P6: Yeah. I liked that that was a real person talking to us.

P7: I liked how someone was literally picking them up and being like “this is what they used” and made it more real than being like oh that’s on a tv screen

P8: And she did it more step by step. She would be like “first they would take this and if they needed to peel the skin back, they would use this tool...”

Discussion

Based on the combined results of the observation notes, survey and interviews two claims can be made about the participant's experience. First, participants desired a combination of all three media as the different media can allow participants to actively engage with content in a variety of ways. Second, education and entertainment are an intertwined concept that requires a balance when it is projected through different media.

The diverse media, in an exhibit, provide different levels of engagement. Each media has advantages and disadvantages that the other media forms can complement. Physical objects (usually) can speak for themselves. It is what it is and can only ever be that thing. Visitors tend to enjoy having “the real thing” whenever possible as the “realness” of the object can help create a

physical and mental connection with the visitor (various students). When the physical item is a museum artifact or a hands-on replica it is usually something visitors do not get to see or experience in their everyday lives. As P3 stated: “Cuz I like real stuff.” “What’s the point of going somewhere if it's available to you in the comfort of your own home?” Even historical or common objects can become ‘new’ to the visitor...

R: What are some usual goals you have when visiting a museum?

P1: to do something fun. To learn new things.

P2: See something cool.

P1: Yeah definitely.

P2: Like a Mastodon tooth.

P3: I told you that was super cool. Did you look at it?

P1: And even more cool look at like baby goats.

P3: (smiling) Baby goats.

The physical objects will be more enhanced when visitors can engage with the object...

it’s a lot more fun to actually communicate with something and know and see instead of just talking about it and like seeing a picture of it as you can actually communicate with it in real life. When you like sit here (in school) and you get bored, at field trips you are always doing something walking or looking at something interesting. (Student)

The physical signs provide the visitor with more information, but due to design and visitor reading limit, is unable to provide depth or details.

Digital technology can provide more information and detail in ways which are becoming more familiar to modern visitors. Information can be displayed through video, touch screens, and audio and can even help enhance the experience by adding dramatic elements such as sound and lighting effects. Narrative content can also be gamified to where visitors take a more active role in their information processing. Information and content displayed through technology are only limited by the amount chosen to be included. Technology allows visitors to set their own pace and choose to take from it whatever they want. What technology seems to lack is being able to make a personal and emotional connection.

Human interpreters provide the third layer of interaction. Whether in first-person or third-person, the human interpreter is seen as a media who can provide subjective information as well as a more personalized experience. The human interpreter is limited by their own knowledge and physical stamina but is capable of being flexible in their conversations to the point where the experience can be personalized. Like the physical objects, some participants appreciated conversing with a “real” person. Even when participants didn’t want to engage with interpreters, they saw value in having them as they help make the exhibit “more inviting” (P5). Costumed characters add to the historic “feel”; non-costumed characters can relate information to current affairs, and both are able to guide visitors to their desired experiences with various physical objects or digital technology.

Each of these media is seen by participants as secondary enhancers to the exhibit narrative. Participant 2 stated it best saying:

I would say just the interaction aspect of having the technology, interpreters and being able to touch and feel and experience it on your own all three I think are important and I think that all three as an option are nice and allows you to kind of make it what you want it to be. But some areas are heavier on technology or make it your own ...touch, see, feel, um and I think perhaps some areas could use more of one type of the other to make it better, but I like having all the aspects.

Depending on how they are used the different aspects of the media can help create a balance with the elements of education and entertainment.

The media in an exhibit are tools that help enhance the education and entertainment aspects of the narrative. Education is seen as a process of “learning” while Entertainment is seen as a process of “enjoyment.” Though they appear mutually exclusive these two concepts are linked by the visitor’s interest. Education and entertainment are motivating factors that bring visitors to a museum. Visitors who are interested in learning about the subject are being entertained by education. In turn, visitors who are not interested in learning about the subject can

be drawn in by an entertaining element. The entertainment should help enhance the educational material to where it becomes enjoyable for visitors to experience. As one student pointed out: “So, you are always learning something when you do something related to it.” However, creating content that has a balance between education and entertainment is a difficult scale to measure. Academic educators have the same difficulty in their classrooms (T1, T2, P6). Too much educational material can become boring and unengaging (T1, P3). Similarly, entertainment can draw people in but too much and people may not be able to “grasp what the intention is” (T1). When entertainment has a purpose behind it the education becomes valuable (P6).

Having a variety of different media can help create a balance between education and entertainment. It is a mistake to assume that our modern society is only a culture of “need it now” (T1), where information can be accessed quickly at the touch of a digital button. It is also a mistake to assume our culture should go back to the “classic” days of learning where students are only lectured at by educators. Neither of these approaches is sustainable for an industry. The mindset of museums should focus on the other side of modern culture where people want to experience things that they aren’t able to do, see, or feel in their ordinary lives and more importantly give them the chance to become a part of it. (P1-P11, and various students).

CHAPTER 5: RESEARCH PHASE TWO: RESULTS AND DISCUSSION

Introduction

The second research phase was focused on understanding the museum experience from the perspective of the museum. The research was conducted with nine experts in the fields of exhibit design and museum interpretation. These experts derived from two museums, located in Indiana. Participants were interviewed in 30-40-minute sessions. These interviews express the opinions of the participants as to how they define and try to create an experience for visitors. Despite individual opinions, several repeated themes could be seen in the analysis that revolves around the relationship interpreters and designers have with the visitors and media as well as how they incorporate education and entertainment into the experience. These themes include the museum role and responsibility as educators, how experience is affected by the different media and how creating and making personal connections affects both the visitor and museum staff.

Research Design

Semi-structured interviews were conducted with nine participants from exhibit design and interpretation backgrounds in order to gain insight into how museums create and design experiences. Interview data were analyzed through the methods of coding and affinity diagrams.

The second research phase focused on understanding the museum experience from the perspective of the museum. Participants in this study were picked based on their roles in the museum, specifically that of the exhibit designer and the museum human interpreter. Museum staff from two Indiana museums were asked for interviews. A total of four exhibit and experience designers were interviewed as well as five interpreters. Their expertise and experience in working in the museum environment provide a perspective on how museums might interpret the visitor experience.

Interviews were conducted on separate days and times depending on the participant's availability. These interviews lasted for 30-40 minutes. Of the nine expert interviews, seven were conducted one on one while two were interviewed together. All interviews were voice recorded and later transcribed for analysis. These interviews are intended to help gain perspective from the museum side of the visitor experience. By interviewing experts with first-hand knowledge and experience, data collected from the visitor's experience could be compared to what some experts are currently trying to achieve in exhibit design and development. Therefore, these interviews could provide potential new knowledge not only to museum visitor studies and exhibit design but also to other industries that provide visitor experience.

Results

In the interviews with the interpreters (I1-I5) and designers (D1-D4), discussions revolved around how they see their roles in providing experience, how they see the relationship between education and entertainment, their views on the different media in exhibits and the highlights and challenges of their roles. Four of the five interpreters interviewed considered themselves as teachers and educators (I1; I2; I3; I5). I5 also considers himself an entertainer, as his craft of oral storytelling is both a way of educating and entertaining visitors. As educators, interpreters will try to expose visitors to things a little different than they are used to (I3; I4) and try to help the visitor make connections to the material and to their own lives (I2; I3; I4).

The ways in which the interpreter does this is to be welcoming (I3) and be skilled in reading the verbal and non-verbal cues the visitor is showing (I1; I2; I3; I5). To be welcoming includes involving them physically and verbally with what the interpreter is doing, asking questions to help introduce what is going on in the space, and letting the visitor know it's okay that they ask questions in turn (I1; I2; I3). Connecting the visitor to the material helps personalize the experience (I2). Being skilled at reading the visitor informs the interpreter if the

visitor wants to engage in conversation, interact with different things or does not want to engage in either (I1; I2; I3; I4; I5). Reading the visitor also helps the interpreter meet the visitor with “where they are at” (I2; I4). To the interpreter, this means adapting their language to filter content or add more elements and detail to the conversation based on either the age or social group (I2; I4). However, interpreters will also “be the bridge” (I2; I3; I4) that exposes and creates an opportunity for visitors to explore content further and reach “ah ha” moments that are reached through conversation or physical participation of the guest (I1; I2; I3; I4; I5).

The roles of designers are similar to interpreters. The designer also needs to be aware of their audience as this helps build for the different visitor demographics and helps make the exhibit accessible (D1; D2; D3; D4). The designer “translates the content into the exhibit design (D3) by researching story and design (D1; D2; D3; D4) and “meshing the tone of story and design together” in a way that honors the story (D4). Connecting people to the story and creating “meaningful engagement” (D3) is the main goal of the designers. Meaningful engagement to designer 3 means making people feel “different than when they came in” and making “Ah ha moments” (D3). “Meaningful engagement also includes respecting the original story and connecting it to the audience” (D4). For designer 2 it is about finding an emotional reaction in the story “Emotion is the glue that makes the memory stick to the learning. Often it opens guests up in their own minds to remember things about their past they may not have thought about for years.” He continues to explain that this emotional reaction is “The commonalities of humanity. Fear, joy, loss, happiness and all of the things that make you a human are the things that make me a human” (D2).

This emotional connection is also what interpreters see linking education and entertainment. Interpreter 1 called it “education through catharsis.” He continues:

I think it all goes back to if you are able to move somebody and make them kind of have an experience where they are not only learning but feeling something, that's gonna stick with them for a really long time. You can tell somebody something til you're blue in the face but once they actually feel that experience and actually have a moment where they are...have a cathartic experience where they're moved, and they're changed, well that's going to be a memory that's where it's going to stick with them for a very long time. And they may not understand all the information, but they at least understood how it felt and how it feels.

Interpreters also appear to believe that “spectacle” helps grab attention but without context provides no meaning (I1; I2; I4). The entertainment element is the hook that “makes it more appealing than just staying at home” (I2; I3). Education and entertainment are equally important (I2; I3; I4; I5) as it is about “teaching someone something in such a way that they aren't going to be bored” (I2). This does not mean putting up “merry-go-rounds” (I4) but could be something as simple as watching a potter throwing clay on a wheel, which is also educational (I3).

Designers also see education and entertainment as a fine balance but have different approaches to create this balance. Designer 1 wants to “create something that is going to make people remember it”. This involves focusing the attention on the artifact “How can I make someone look at something in a completely new way? How do I get them to see the significance or importance of this object? How do I make them remember when they go through space?” (D1). Designer 2 looks at “the different directions a story can go.” “You have to find: What are people going to enjoy? What are they not going to expect? What are the learning moments about things?” (D2). For designers 2, 3 and 4 it is about looking for the best opportunities to break down and tell story. This could be through physical artifacts, human interpreters, digital technology or a combination of media. Designer 3 pointed out that “It's important to make sure that if someone is not going to learn something, they're at least having a good time” and that if

“you’re not learning you can still interact.” The challenge is to provide just enough level of engagement without turning it into a circus (D3).

The different media of physical objects, digital technology, and human interpretation are the tools museum staff can use to help them tell the exhibit narrative and create a balance between education and entertainment. When the media gets used depends on the needs of each individual exhibit (D1; D3; D4). Physical objects are useful in recalling memories and can be used to help people connect to a time, place or specific memory (D2). Sometimes these objects are “speaking for themselves” (D1) or can be interpreted by the other media forms.

Designers relationship to digital technology seemed to come with the warning label: “approach with careful consideration” as many expressed statements about its ability to only “sometimes work” (I2; D1; D2; D3).

Technology, when used judiciously, can be great. I think throughout the field there is a push to put tech everywhere because everybody is used to touch screens and using their phones so there is constantly that push to have more and more technology in an exhibit. I’m kind of on the fence about that. I think it’s important to allow people to interact in that way but another thing you have to consider is technology breaks and it breaks a lot. It also becomes outmoded very quickly. You put in all this technology into an exhibit, you have to have that upkeep ready and that isn’t always necessarily the case in the museum world because you have a project that you’re working on and you have a limited budget and you put in all this technology and you have to build in money for that year after year after year to fix it when it breaks and update it to be something that is sustainable and can last for a long time. So, I am very careful about what sort of technology I put in and how I use it. I don’t think you should just throw in a touch screen to have a touch screen. If there is a value add to the exhibit, then it’s worth putting in. If it’s something that is going to be helpful to the story you are going to tell, put it in. (D1)

When interpreters are in the same space as the technology this “value add” is important. Interpreter 2 and 4 have both worked in exhibits where they experienced both a poor use and good use of technology. When Interpreter 2 recounted her example of a poor use of technology she expressed feelings of confusion as to what the technology and her purpose were in the

exhibit. Interpreter 4 also expressed feelings of confusion but only towards the technology's purpose, not her own. She relayed that there were other things in the exhibit for her to engage visitors with. When Interpreter 4 did feel a piece of technology worked it was because the content helped her create further discussion with the visitors. Interpreter 4 also provided another example where she experienced having connections and conversations with the visitors by using a non-digital form of technology. Visitors were challenged to use a motor and different fan blades to create higher wind power. This physical technology helped the interpreter engage with visitors as the challenges she set for people reached across not only children but also adults.

The larger role interviewees saw for digital technology was to provide a way for visitors to engage with content when they didn't want to engage with the human interpreter or if they wanted to have a solo experience (D2; I1). The technology is also seen to target different learners (D2) and (when thought out) can add an extra layer to oral storytelling (I5).

How interviewees saw human interpreters is similar to how participant 9 described his opinion of them. The element human interpreters can bring to the exhibit is detailed subjective information. Designer 2 described it as:

Humans can look you in the eye and read you. Read the things you're not saying. Technology can't do that. Technology isn't able to see oh I just said something she's super interested in. I'll go down that route. Or I just said something that really hit a nerve with her maybe I shouldn't go down that route. Read their guest and react to their guest. The conversations that can happen, it doesn't happen with every guest, the depth of conversation and entertainment and learning that you can get with a human can go far deeper and more personal and more tailored than anything that you can do with technology.

This ability of the interpreter can add another layer to the story as well as to the experience of the visitor (D2; D3; D4). Even though technology has many perceived limits, human interpreters do as well (D2; I3) such as facing the elements (I3), getting discouraged over poorly received interactions with visitors (I1; I2; I3; I4; I5) and the amount of information they know about

different topics (I1; I2; I3). However, each media has its own way of contributing to the visitor experience (D2; D3; D4).

Discussion

As educators and entertainers, the most important part of creating the visitor experience is being able to convey the exhibit narrative. How the different media are used can influence the levels of education and entertainment but not all the media has to be used at once. There are “thousands of ways to display a concept” but the job of exhibit designers is to uncover “what is the most appropriate way of displaying content” (D4).

Each media form has its own way of providing education and entertainment as well as different ways of engaging visitors. Education is already incorporated into the mission of a museum, whether displayed through written text, audio/visual media or human-guided instruction. When entertainment is incorporated into an exhibit, it acts as a draw to bring a wider range of visitors to the content. This entertainment could be a controlled form of “spectacle” or a way of presenting educational content in a way that is “new”, “exciting” or “unexpected” (D2; D3).

Entertainment is what is going to keep bringing them back. Some people don't like change. We're a museum. We're supposed to be teaching history. Yes, we are but if we want to continue to teach history and to continue to have our doors open to the public, we're also going to have to think about the part that brings them in. History is going to bring some people in, and history is not going to bring people in. Entertainment is a big part of it and if you can make history entertaining...the history channel did it. Hollywood does it all the time. Probably not in the best manner. Based on a true story. How loosely based? They use that to snag people. Finding new ways to entertain people and teach them history is very important. How do we bring them in? how do we keep them coming back? How do we keep them enjoying their experience? If museums don't do that then museums aren't going to be around (I5).

When the visitor is “hooked” by their own interest, the phase of content engagement can begin. Educational and entertaining engagement is most effective when visitors can involve themselves through physical or emotional connection.

The physical connection is through touch but the act of touching a screen does not count. Interpreter 3 remembered a time when she worked with digital technology in an exhibit. She said that it would often go ignored because the visitors would be more interested in the physical work, she was doing on a loom than tapping on the screen. The emotional aspect of the narrative is reached through the visitors own mental connection. This connection is made through the visitor’s personal experiences and memories and can be “triggered” through the physical objects or conversations with the interpreters. Designer 2 recalled a time when the design of a recreated 1950’s countertop made multiple visitors exclaim that they remember their mother having one just like it.

The connections, media can add to the narrative content, affect both visitors and the museum staff. While conducting interviews, some of the interviewees became emotional while recounting stories of experiences they had with visitors (I3; I4; I5; D2). Not only did these stories invoke strong emotions within the interviewees long after the interactions occurred but each interaction was perceived by the interpreter to have also strongly affected the visitor when the interaction took place. Two of the stories are recounted below.

The first story is a retelling of Interpreter 5’s first-hand account of interacting with visitors. He recounted the following story when he was asked about the highlights of being an interpreter.

The highlights for him were the “ways that I have touched people’s lives. Even not intentionally. Not knowingly.”

One time, when he was working as the blacksmith in the town... “a young man and his grandfather from Italy came into the blacksmith’s shop. The grandfather could not speak any English, but he wanted to visit the blacksmith shop because

he remembered the blacksmith shop in the village where he lived as a little boy. The grandson translated for me. The grandfather was so amazed, and I invited him up and I let him pull the bellows. The grandfather turned and was very tearful and said something to his grandson. The grandson was trying to translate what his grandfather had said into English. The closest he said it translated to was that he wishes to thank you from his very heart because you allowed him to relive a part of his childhood. It's things like that that make it worthwhile. I didn't set out to make that big of an impression on that gentleman, but I just realized how much he had with those memories and I was able to bring him back to his childhood. You are able to connect with them and be able to give them joy and happiness with something so simple as that. Who would have thought that would have meant so much, to pull on a set of bellows? He's Italian, couldn't speak any English, but we were able to communicate, and we were able to make known to each other what we wanted the other to know and were able to touch each other's lives. I think that's important, that you can do that. We are one race of one people. The only division that we have is by language, or customs or skin color, but underneath that, we are all still human. We are all still one race of people."

While discussing his goal of creating "physical and conversational touchstones" in an exhibit, Designer 2 recounted this next story. The following paragraph is retold from Designer 2's interview where he recounts a second-hand story of a visitor encounter told to him by another interpreter. Despite not witnessing the exchange first hand, the story still affected him deeply.

In an exhibit displaying a 1945's grocery store, there were magazines from the time with recipes. A lot of the recipes were how to cook with your rations or how to substitute sugar because you can't get sugar because of the rations. There was a woman who was talking to one of our actors who was portraying a shopper in the store. The two engage in normal conversation and all of a sudden, the actor mentions the word coconut. "Oh, there is a great recipe in there for coconut cream pie." The older visitor starts to tear up. The interpreter is trying to play in her head what she could have said to make the visitor tear up. As it turns out the visitor went on to tell her story about when she was a girl. During the war, her boyfriend was a delivery boy for a grocery. The visitor's mother had said to him one day that if he ever came across a can of coconut, she would love to have it. Coconut is her husband's favorite cake and she hadn't made it for a very long time. After a while, the woman's boyfriend ends up with a can of coconut and he takes it over to the house, knocks on the kitchen door and the mother comes to the door and he asks her for her daughter's hand in marriage. Essentially, the visitor says, "My mother traded me for a can of coconut." How often do you hear the word coconut in your life? You hear it. It comes up. But at this moment, in this place, with this woman dressed in 1945, looking through this magazine it hit that guest in a new way.

Making strong physical and emotional connections with the visitor whether it's through physical objects, digital technology, human interpretation or combinations of, will help enhance the visitor's experience.

CHAPTER 6: CONCLUSION

The stories that are preserved within the collection and within its people compose the heart of a museum. How museums tell these stories is what creates the museum experience. The role of the modern museum is to find and make internal and external connections for the people who come to experience the stories being told. Media, in all its various forms: physical objects, digital technology, and human communication, are tools museums can use to help enhance the story. When these tools are used in balance with each other's advantageous parts, the visitor's experience also is enhanced.

The physicality and “realness” of the physical objects allow visitors to experience “new” things or remember the old. Digital technology does not create a physical experience or a sense of “realness” and is not considered a “new” experience, but it can expand the written text by converting it into multilayered, and explorable content. The exploratory story can happen through interactive screens, video and gamified content. Digital technology also can “draw” in visitors by its ability to create spectacle and drama. The style of human interpretation done at living history museums creates a sense of “realness” through the use of costumed characters or modern staff. Human interpreters can personalize the museum experience by their ability to “read their audience.” By reading their audience, human interpreters and exhibit designers can navigate and bridge the narrative content to the visitor's interest. Not only does this personalize the experience but it also creates opportunities for emotional and subjective dialogues.

Every museum has its own style of human interpretation, but the style of interpretation done by Living History Museums is unique. Implementing the Living History Museums style of interpretation can benefit other museums as they work on the balance of their exhibit design. To stay competitive, many museums are following the trends of human-computer interaction.

However, there are some pockets in the museum field that have started looking into how they can create more intriguing experiences with human-human interaction.

In 2013, Nick Gray founded the museum tour company Museum Hack (Press and Media. n.d.). This tour company was created to “reimagine the adult museum experience” (Gray, N. 2015) by focusing less on the “facts” of the object and more on the object story and interest of the tour groups (Press and Media. n.d.). In his TEDx talk, Gray provides examples of some of the interaction’s groups can experience. In the early days of the company, Gray would take his friends to the Metropolitan Museum of Art and take them on a tour guided by the theme of ‘ten things Nick loves and three things he would steal’ (2015). Gray would briefly provide some background on the object by weaving facts into a story. He would then encourage his friends to look closer at the object by “pressing their faces up to the glass” and to “look at the craftsmanship” (2015). Gray would finally ask his friends questions such as “What would you put inside of (this object) if you stole it? Their answer was usually chocolate or drugs” (2015). According to the tour company’s website: “Museum Hack tours are different because we tell stories about the art and artists, do fun activities in the galleries, take selfies with the art, and generally have a great time!” (Press and Media. n.d.).

Thus, this thesis makes the following contributions to the current understanding of visitor experience. The research gathered in this thesis shows that the first and most important element of experience is the story. Visitors choose experiences based on their interests in the narrative. The way in which these narratives are told is through secondary resource tools that simultaneously enhance the visitor experience and provide elements of education and entertainment. Each of the media mentioned in this thesis can be designed to create a balance between the elements of education and entertainment by giving the visitor options to choose how they engage with the narrative content. The level of engagement involves a range of activities

dependent on the visitor's interests. Visitors, of any demographic, enjoy engaging with their environment by reading the text, manipulating physical objects and participating in dialogue and work where they can connect to and share their own personal story. This information is important as it demonstrates the multidimensional ways in which people prefer to interact with their environments. This information also shows that regardless of how digital technology is used, people still desire opportunities to communicate and engage with other people in face-to-face situations. If this transmits to anything it means that the human element is still relevant.

Not only is it important for experience designers to focus the secondary resource tools around the story but it is also important for the content of the story to be strong. If the story content is created with strong intentions and purpose, then the enhancement that the secondary resource tools bring will follow. If story content intentions and purposes are not as strong or development as they could be, the enhancement the resource tools bring have no structure to build upon. The importance of story content can be seen in the studies that look at the use of technology in schools (Kennedy, 2017; Warschauer, 2004). When schools put resources into new technology the technology will only help improve the learning experience if the curriculum is also improved. As the Warschauer et al study showed, the curriculum in a low socioeconomic school was not the same as its higher socioeconomic counterpart (2004). Therefore, students and teachers could only implement the technology as far as the curriculum allowed (Warschauer, 2004).

The "identity crisis" in museums could be the result of a desire to stay competitive with the changing new media world and a desire to remain the traditional safe-haven of a culture's identity. It is then easy to see how the elements of entertainment and education became opposing forces when discussing the future of museums. This thesis argues two main points. First, all museums can reduce "identity crisis" tension by finding a balance between the elements of

education and entertainment. Second, finding balance requires more than just choosing to use one secondary-resource tool over another. Balance is more easily found when the resource tools have a strong narrative to support. The resource tools any industry has at their disposal are physical objects, digital technology, and the living history example of human interpretation.

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APPENDICES

Appendix A – Participant Survey Questions

Adult and Student Questions (50)

For each of the questions below, please circle the response that best matches how you feel about each statement, where 1 = strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Animal Encounters Barn	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The exhibit held my attention	1	2	3	4	5
2. I enjoyed visiting the exhibit	1	2	3	4	5
3. I lost track of time in the exhibit	1	2	3	4	5
4. I always felt focused on what was in front of me.	1	2	3	4	5
5. I learned something new from this exhibit	1	2	3	4	5
6. After leaving the exhibit, I wanted to know more about what I learned	1	2	3	4	5
7. I could understand most of the things I saw and did at the exhibit	1	2	3	4	5
8. I felt like I could interact with the exhibit	1	2	3	4	5
9. The interpreters helped me understand the topic of the exhibit better	1	2	3	4	5
10. The interpreters were hard to understand	1	2	3	4	5
11. The interpreter enhanced my experience with the exhibit	1	2	3	4	5
12. I felt like I could learn about what I was interested in	1	2	3	4	5
13. I felt like I could ask or find out more about things I was interested in from the interpreter	1	2	3	4	5
14. The interpreter was distracting me	1	2	3	4	5
15. I was not interested in what the interpreter was saying	1	2	3	4	5

William Conner House	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The exhibit held my attention	1	2	3	4	5
2. I enjoyed visiting the exhibit	1	2	3	4	5
3. I lost track of time in the exhibit	1	2	3	4	5
4. I always felt focused on what was in front of me.	1	2	3	4	5
5. I learned something new from this exhibit	1	2	3	4	5
6. After leaving the exhibit, I wanted to know more about what I learned	1	2	3	4	5
7. I could understand most of the things I saw and did at the exhibit	1	2	3	4	5
8. I felt like I could interact with the exhibit	1	2	3	4	5
9. The technology helped me understand the topic of the exhibit better	1	2	3	4	5
10. The technology was hard to understand	1	2	3	4	5
11. The technology enhanced my experience with the exhibit	1	2	3	4	5
12. I felt like I could learn about what I was interested in	1	2	3	4	5
13. I felt like I could ask or find out more about things I was interested in with the technology	1	2	3	4	5
14. The technology was distracting me	1	2	3	4	5
15. I was not interested in using the technology	1	2	3	4	5

Civil War Journey	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The exhibit held my attention	1	2	3	4	5
2. I enjoyed visiting the exhibit	1	2	3	4	5
3. I lost track of time in the exhibit	1	2	3	4	5
4. I always felt focused on what was in front of me.	1	2	3	4	5
5. I learned something new from this exhibit	1	2	3	4	5
6. After leaving the exhibit, I wanted to know more about what I learned	1	2	3	4	5
7. I could understand most of the things I saw and did at the exhibit	1	2	3	4	5
8. I felt like I could interact with the exhibit	1	2	3	4	5
9. I was completely unaware of the technology in this exhibit	1	2	3	4	5
10. The interpreters helped me understand the topic of the exhibit better	1	2	3	4	5
11. The interpreters were hard to understand	1	2	3	4	5
12. The technology helped me understand the topic of the exhibit better	1	2	3	4	5
13. The technology was hard to understand	1	2	3	4	5
14. The technology enhanced my experience with the exhibit	1	2	3	4	5
15. I felt like I could ask/find out more about things I was interested in from the interpreter	1	2	3	4	5
16. The interpreter was distracting me	1	2	3	4	5
17. The technology was distracting me	1	2	3	4	5
18. I felt uncomfortable asking the interpreter questions	1	2	3	4	5
19. The interpreter enhanced my experience with the exhibit	1	2	3	4	5
20. The technology kept me engaged with the topic	1	2	3	4	5

Appendix B – Participant Interview Questions

1. Students
 - a. What was your favorite place to visit? Why?
 - b. What was your least favorite place to visit? Why?
 - c. What kinds of things did you learn on this trip?
 - d. How did you discover this new information?
 - e. Did you like interacting with the workers in the exhibit? Why or why not?
 - f. Did you like interacting with the technology in the exhibits? Why or why not?
 - g. What was the most fun activity you did at the museum? What made it fun?
 - h. What was the least fun activity you did at the museum? What wasn't fun about it?
 - i. If you could go back to the museum, would you want to? Why or why not?
 - j. What makes a field trip different from being in the classroom?
 - k. What is similar about going on a field trip and being in a classroom?
2. Teachers
 - a. What are your usual goals you have for your students when planning for a field trip?
 - b. What is the difference between a field trip and classroom?
 - c. How do you think places like museums are helping students learn?
 - d. In your opinion, what is the relationship between education and entertainment? How does this relationship effect the learning of your students?
 - e. How do digital technologies help you as a teacher?
 - f. How do digital technologies hinder you as a teacher?
 - g. What do you see as the main role for technology in a museum?
 - h. What do you see as the main role for human interpreters in a museum?
 - i. How do you see digital technologies positively effecting students' abilities to learn about subjects like history?
 - j. How do you see digital technologies negatively effecting students' abilities to learn about subjects like history?
 - k. How do you see human interpreters positively effecting students' abilities to learn about subjects like history?
 - l. How do you see human interpreters negatively affecting students' abilities to learn about subjects like history?
3. Adults
 - a. What are some usual goals you have when visiting a museum?
 - b. How do you usually like to accomplish those goals when visiting a museum?
 - c. What about your visit today stood out the most?
 - d. How were you able to interact within the different exhibits?
 - e. What were some new things you learned today?
 - i. How did you find out about these things?
 - f. Was there anything in the exhibits that enhanced your experience?
 - g. Was there anything in the exhibits that took away from your experience?
 - h. In your opinion, what is the relationship between education and entertainment? How does this relationship affect your experience in a museum?
 - i. What do you see as the main role of technology in a museum?
 - j. What do you see as the main role of human interpreters in a museum?

Appendix C – Expert Interview Questions

1. Designers
 - a. What are your goals when developing an exhibit?
 - b. How do you approach a new exhibit design project?
 - c. What role do the visitors play in design?
 - d. What role does museum staff play in design?
 - e. What role does digital technology play in design?
 - f. What are the biggest challenges when designing an exhibit?
 - g. As a museum designer, how do you balance the different elements of entertainment and education throughout your design?
 - h. Who would you say is a designer's target audience?
 - i. What are some strategies you use to reach your target audience?
 - j. As an exhibit designer, what is the most important thing to you in an exhibit?

2. Interpreters

- How do you see your role as an interpreter?
- What are some highlights of being an interpreter?
- What are some of the challenges?
- In your opinion, what is the relationship between education and entertainment in a museum environment?
- How do you try to incorporate a visitor with your interpretation?
- If you work with digital technologies, how do they help in your interpretation? How do they hinder your interpretation?
- What is the relationship between you, the visitor and the digital technology?

Appendix D – Student Interview Saturate and Group Responses



Q1: What was your favorite place and why?



Q2: What was your least favorite place and why?



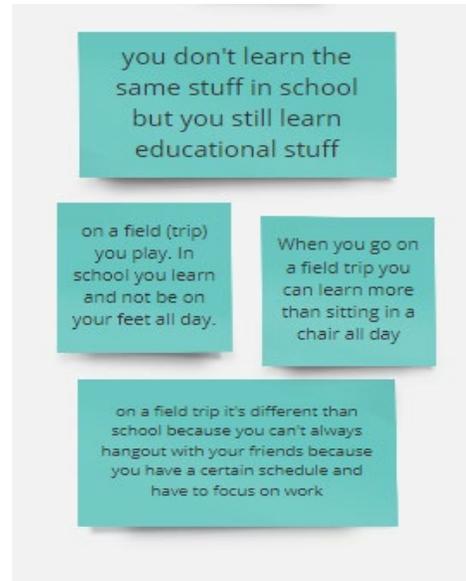
Q3: What were some things that you learned?



Q4: How did you learn these new things?



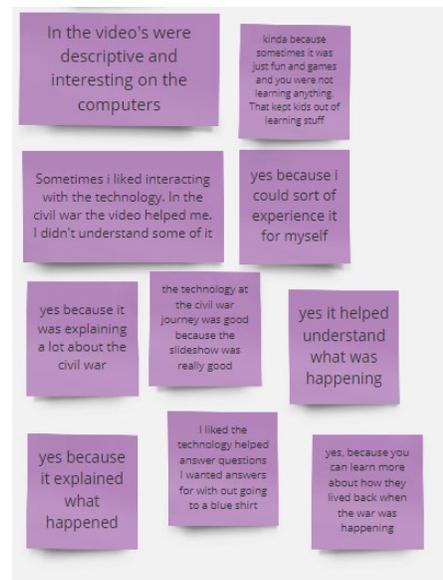
Q5: Did you like interacting with the workers in the exhibit? Why or why not?



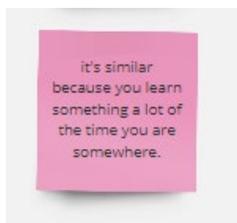
Q6: Did you like interacting with the technology in the exhibit? Why or why not?



Q7: If you could go back to the museum would you want to? Why or why not?



Q8: What makes a field trip different than being in a classroom?



Q 9: What makes a field trip the same as being in the classroom?

Appendix E – Survey Data Results

Adult Participants		
Human Vs Technology		
	P-value	Confidence Interval
Interest	0.6965822	-0.482115 0.322115
Understanding	0.9623595	-0.4253166 0.4053166
Engagement	0.9593728	-0.3747613 0.3947613

Student Participants		
Human Vs Technology		
	P-value	Confidence Interval
Interest	0.666337	-0.2772829 0.1772829
Understanding	0.3575901	-0.3443563 0.1243563
Engagement	0.666337	-0.2772829 0.1772829

Human Vs Human and Technology		
	P-value	Confidence Interval
Interest	0.5173536	-0.523556 0.263556
Understanding	0.7776034	-0.4763663 0.3563663
Engagement	0.5896258	-0.5097194 0.2897194

Human Vs Human and Technology		
	P-value	Confidence Interval
Interest	0.2014772	-0.35481904 0.07481904
Understanding	0.1577927	-0.40588806 0.06588806
Engagement	0.666337	-0.2772829 0.1772829

Technology Vs Human and Technology		
	P-value	Confidence Interval
Interest	0.7986732	-0.4342164 0.3342164
Understanding	0.8141239	-0.4668274 0.3668274
Engagement	0.5545627	-0.5180121 0.2780121

Technology Vs Human and Technology		
	P-value	Confidence Interval
Interest	0.3999787	-0.299586 0.119586
Understanding	0.6288844	-0.3033283 0.1833283
Engagement	1	-0.2321173 0.2321173