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COMPUTER-MEDIATED COMMUNICATION OF HISTORY MUSEUMS IN THE  
MIDWESTERN UNITED STATES: A WEB CONTENT ANALYSIS

By

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MIDWESTERN UNITED STATES: A WEB CONTENT ANALYSIS

ABSTRACT

Adult museumgoers have come to expect increased access to museum information and resources through computer-mediated communication (CMC). Current research suggests that museum websites can increase the desire to visit the museum physically. The purpose of this study is to investigate how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers. This qualitative content analysis follows Pauwels' (2012) Multimodal Framework for Analyzing Websites as Cultural Expressions. The data was collected from 16 history museum websites, then analyzed using MAXQDA. The data collected provides insight into the methods and language museums use to describe the value of digital experiences to adult museumgoers.

Culturally specific meanings can be found in the explicit and implicit content of an organization's website. This content can reveal information about the organization, such as mission, beliefs, and values. The results of this study suggested that visitors of history museums are the recipients of embedded messages either explicit or implicit. The second theme that emerged from visual analysis was *building digital communities*. This study elucidated how smaller museums often promote the physical museum experience over the digital, but they frequently rely on social media technology to communicate the socio-cultural context of the museum, regardless of the geographic location of the museum. Museum educators need to provide online opportunities that go beyond information exchange and target the identity-related needs of adult learners. A second recommendation is that they prioritize social exchange in online

platforms with a focus on cultivating and strengthen relationships between museumgoers as well as connectedness to the museum.

Keywords: computer-mediated communication, museum marketing, digital museum experience

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## CHAPTER 1

### INTRODUCTION

Contemporary museums face serious challenges stemming from reduced funding, societal change, and new digital technologies (Falk, Dierking, and Semmel 2016). Museums are intensely focused on integrating technology into their education strategies because they recognize their role not merely to store objects of interest but also to educate (Parry, 2010). Everett and Barrett (2011) suggested measurable outcomes for museumgoers after a museum experience, aside from education, including personal well-being, sense of self, and feelings of connectedness to community and culture. However, the literature is focused primarily on cognitive learning outcomes (Falk, Dierking, and Semmel 2016). It provides little documentation of the range of benefits derived from the museum experience (Falk, Dierking, and Semmel 2016). Digital technology has made it possible for organizations to not only stay connected to their audience, but also increase understanding and communication. Museums use computer-mediated communication (CMC) to interact with members of their organization, potential visitors, stakeholders, and the community (Thurlow, Lengel, and Tomic 2017). CMC can be defined as any human communication that is achieved through the use of computers (Thurlow et al., 2017). Understanding the role of digital technology in the adult museum experience can help museums better communicate their missions (Falk, 2020).

While museumgoers may enjoy using digital technologies such as interactive exhibits, a review of the literature shows there is a substantial pedagogical value when incorporated into more traditional museum exhibits (Falk et al., 2016). There is a shift towards gamifying information, creating a sort of edutainment experience for the museumgoer (Collins and Halverson, 2009). As Collins and Halverson (2009) suggested, this technology is sometimes seen

as diversionary threats to the integrity of the educational missions of the organizations. Views on the role of digital technology in museums have changed over time. In the 1980s, scholars were troubled by how fragmented and isolated history had become (Woods, 2016). They expressed concern about their relative isolation from each other and the public (Woods, 2016). However, as digital technology emerged, the excitement over new possibilities recharged scholars, opening new channels to network with other historians, create new methodologies, and reach the general public (Kyvig and Myron, 2010).

Over time, museums have evolved to include numerous technological advances, such as digital displays, virtual reality, digital guides, and online exhibits (Falk et al., 2016). New approaches in understanding museum visitors have moved beyond surveys and casual observation and now includes quantitative research methods, as well as multi-disciplinary approaches, as seen in the earlier studies of Bitgood, Patterson, and Benefield (1988), Chung (2016), and Eghbal-Azar et al. (2016). Rather than a technological wild west, Falk, Dierking, and Semmel (2016) proposed using goals to guide the use of technology. One of these goals for museum leaders should be able to recognize, remember, and respond to the needs and interests of individual visitors to support learning and exploit emerging technologies for real-time assessments and evaluations. This purpose driven approach to implementing technology has changed the landscape of museum learning by motivating museum educators to look for resources tailored specifically to understanding the needs of adults, such as how to best train teaching staff so that they can engage adult visitors in more meaningful ways (McCray, 2016). To best guide the use of technology in meeting the needs of adult learners, Falk et al., (2016) stress the importance of recognizing, remembering, and responding to visitors' individual needs

and interests. By doing so, leaders support learning and exploit emerging technologies for real-time assessments and evaluations (Falk et al., 2016).

The existing literature identified common themes related to the efficacy of technology in the museum setting, suggesting that digital technology has substantial pedagogical value when incorporated into more traditional museum exhibits. Museum educators are essential guides of the learning process who typically tailor their education efforts towards the mastery and delivery of factual content (Mccray, 2016). Increasingly, technology is considered as a useful tool to deliver such factual content (Mccray, 2016). A study conducted by Eghbal-Azar et al. (2016) found that mobile technology may be an essential tool to foster learning in museums and exhibitions, making it an important addition to a museum's offering. Their study examined visitor behavior by leading one group through a museum with a traditional guide and another with a mobile application on their phones to guide them through the exhibit. The visitors using a digital guide on their mobile device spent about 60% more time in the exhibition and scrutinized individual exhibits more extensively (Eghbal-Azar et al., 2016). Digital media is only one of many factors influencing the learning process of museum visitors, and not all museumgoers have the same motivations, needs, or desires. Museums also use other forms of digital technology to reach their audience, including social media, online exhibits, and interactive displays.

Previous research has demonstrated that when museums integrate technology into their exhibits, it can produce positive outcomes in learning and engagement (Mccray, 2016). Yet, few studies investigate how small, medium, and large history museums in the mid-western region of the United States communicate the value of these digital offerings to adult museumgoers. The existing literature suggests that museum technology and the use of CMC is an understudied area, particularly with regards to museums in the mid-west. Research into museumgoers' perceptions



of digital technology in the museum environment aims to measure its pedagogical value, rather than how that value is communicated.

### **Problem Statement**

Adults represent a large and growing segment of museum visitors and have different needs and motivations than children when visiting a museum (Griffiths, 2008). Education is a crucial consideration that adult museumgoers have when deciding whether to visit a museum in-person or remotely (Griffiths, 2008). However, adults who engage with museums do so almost as equally in-person (87%) as remotely via the internet (86%) (Griffiths, 2008). Although curators and educators view education as a central principle for their programming and exhibitions, adult learners are underrepresented in museum research (Neill, 2010). Further, limited studies investigated how adults respond to the same variables as children. Geismar (2018) argued that the museum educator must understand the context and materiality of digital objects and integrate them within a continuum of material culture, calling for a more in-depth study of the impact of digital technologies on adult learning in a physical museum context (Geismar, 2018). Examining how museums use CMC to express the value of digital technologies to adult learners was an aim of this study.

### **Purpose of the Study**

The purpose of this study was to investigate how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers. Using a qualitative content analysis, the study collected data from websites and social media from small, medium, and large history museums in the midwestern United States. According to the Association of Midwest Museums (AAM), there are 353 museums in the Midwest ("AMM: Museums in the Midwest," 2020). The Midwest, as defined by the AAM, is an

eight-state region that encompasses Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin ("AMM: About," 2020). The data collected from a sample of museum websites provided insight into the methods and language museums use to describe the value of digital experiences to adult museumgoers. Research suggests that aging adults tend to use the internet for communication and information seeking purposes (Hill, Betts, and Gardner, 2015). While computer-mediated social networks increased feelings of connectedness and social contact and reduced loneliness, these benefits alone are not sufficient for the adult learner (Hill et al., 2015). For digital technology to be enriching to the adult learner, it should be coupled with face-to-face social contact (Hill et al., 2015). By using the contextual model of learning and integrative content analysis methodology, this study examined museum websites to understand how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers.

### **Research Question**

To exploit emerging technologies, museums must recognize, remember, and respond to museumgoers' needs and interests (Falk et al., 2016). This study's research question was: *How do small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers?* This question was developed to evaluate how these museums meet the different needs museumgoers through the implementation of digital technology and explore what language is used to express these benefits to build relationship and connectedness to the museum. The researcher sought to understand what targeted and personal appeals are communicated and what benefit propositions are presented. Much of the existing research has been limited to how children describe their experiences with technology within the museum's physical context (Neill, 2010). This leaves room for exploration into how the museum

describes their potential and value of the digital experience, particularly to adults. This study aimed to understand how museums communicate the value of digital technology to adult museumgoers. Through the examination and analysis of museum websites, this study examined how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers.

### **Conceptual Framework**

In addition to guiding a study, a conceptual framework is needed to promote coherence and quell any confusion that may occur during the research process (Ravitch and Riggan, 2017). A qualitative content analysis is a widely used research method that helps facilitate the understanding of communication content (Kim and Kuljis, 2010). Content analysis is a systematic technique for coding symbolic content found in communication, such as text and images and especially structural features like message length, distribution of certain text or image components, and semantic themes (Bauer and Scharl, 2000). In the field of communication, studies, Web Content Analysis (WebCA) has emerged as a way to conduct a qualitative content analysis when analyzing data gathered from the internet. Herring (2010) posits that WebCA can be interpreted from two different lenses: 1) the application of traditional content analysis techniques, narrowly construed, to the web 2) the analysis of web content, broadly construed, using various (traditional and non-traditional) techniques. This study utilized a content analysis method, more specifically, Web Content Analysis (WebCA).

This WebCA used Pauwels' Multimodal Framework for Analyzing Websites as Cultural Expressions. Pauwels' (2012) 6-phased framework of website signifiers provides a foundation for the multimodal analysis of websites from both a medium specific and socio-cultural perspective: 1.) Preservation of First Impressions and Reactions, 2.) Inventory of Salient

Features and Topics, 3.) In-depth Analysis of Content and Formal Choices, 4.) Embedded Point(s) of View or 'Voice' and Implied Audience(s) and Purposes, 5.) Analysis of Information Organization and Spatial Priming Strategies, and 6.) Contextual Analysis, Provenance and Inference. The Multimodal framework guided the collection, analysis, and interpretation of the website data gathered.

### **Assumptions, Limitations, and Scope**

There are certain assumptions and limitations of this study. It is assumed that the websites selected for analysis have been created with the intention to promote digital technology to adult museumgoers as a way to engage with the museums. Images from small, medium, and large history museums in the midwestern United States were collected from history museum websites found through Google searches based on keywords (interactive exhibits, augmented reality, virtual reality, virtual exhibits). Another assumption is that the portrayal of the museums' digital offerings is meant to attract an adult museumgoer and is viewed as a positive value to the museum and the audience. Further, due to the dynamic nature of online content, it is necessary to create a screen capture of the site to capture the digital environment at the time of the study. Images of the websites were saved to the investigator's computer and dated before analysis.

This study was also limited by the time frame allotted for the study. It was also limited by the 16 museums chosen by the investigator to study. Another limitation is that the study did not take into consideration the socioeconomic status of the target demographic of the museums' marketing materials. While digital technology created new opportunities for engagement for museums, it also created a socioeconomic divide. Low-income adults are least likely to engage in learning (Hyland-Russell and Syrnyk, 2015). For instance, those participants of lower socioeconomic status may be excluded from using technologies such as mobile apps and digital

guides. Minority populations, for example, are already under-represented in museum attendance. African American and Hispanic populations visit museums at a rate of 20% to 30% lower than the national average (National Endowment for the Arts, 2014). Museums face challenges attracting low-income adult learners and implementing effective programs and support systems to ensure that they are engaged and benefitted. Since studies are inherently limited by time, location, and the background of the researcher, more empirical research is needed on socioeconomic variables and how technologies may exclude vulnerable communities that may struggle with digital literacy and access. A limitation of this study includes a small sample size of museums. Further, data were collected from a single country (U.S.) and a single region (Midwest) within that country. Finally, this study was limited because it is qualitative and, therefore, interpretive (Manen, 2016).

### **Rationale and Significance**

Museum researchers note the need for in-depth examinations on the relationships that visitors form with museums and museum websites, and how these relationships influence their use of digital museum resources (Marty, 2008). With the absence of adult education and learning theory in museum studies, McCray (2016) argued that there is a potentially false dichotomy based on age and years. However, this difference is not limited to age and years, but rather encompasses a more complex and sometimes confusing concept of biological, physiological, legal, social, psychological, spiritual, and moral definitions (McCray, 2016). Freire (2014) postulates that adult learners can become agents of curiosity, investigators, and subjects in an ongoing process to illuminate the “why of things” through the examination of texts and cultural artifacts, looking for their meaning in their social, historical and political contexts (Falk and

Dierking, 2013). The museum's role is integral not only to this dialectical process of education but also to the personal growth of adult learners (McCray, 2016).

Evolving perspectives on the role of the museum as an information service organization prompted questions about the relationship between museums and information science (Marty, 2008). The changing needs of museumgoers have driven these questions, as they now have expectations about increased access to museum information and resources (Marty, 2008). Studies have shown a tremendous increase in online museum visitors (Kabassi, 2017). Many studies have concluded that a museum's website can increase the desire to physically visit the museum (Kabassi, 2017). Thus, a museum of any size should have a well-designed website to attract more visitors, making the evaluation of a museum website a critical phase of its life-cycle (Kabassi, 2017). The majority of museums are funded by governments and corporations seeking social investment (Hume and Mills, 2011). This creates increased accountability and pressure on museum leadership to change the museum function (Hume and Mills, 2011). By using digital technology, museums have created more services that allow increased access to their services (Hume and Mills, 2011). Hume and Mills (2011) state that the primary goal is still to attract visitors. An exploratory study by Yeh and Lin (2005) suggest that a museum's leadership's perceptions influence how services are delivered to the public rather than individual patrons. Adult museumgoers have clear expectations when using museum websites (Kabassi, 2017). A museum's unique ability to offer both information and experience to its audience provides a valuable opportunity for them to meet the needs of adult museumgoers (Kabassi, 2017). A lack of personalized experience can lead to boredom and disengagement (Yeh and Lin, 2005). Understanding how museums communicate the value of digital experiences to adult

museumgoers is critical, since museum funding is limited and must compete not with other museums for funds, but also other nonprofits (Kotler, 2003).

### **Definition of Terms**

*Andragogy*: a distinct field of inquiry into the method and practice of teaching adult learners (Knowles, 1990).

*Augmented Reality (AR)*: a technology that utilizes smart devices to overlay virtual information onto the real world in three dimensions, combining the real and virtual, allowing for interactivity in real-time (Hockly, 2019).

*Computer-mediated Communication (CMC)*: any human communication that is achieved through the use of computers (Thurlow et al., 2017).

*Gamifying*: using game design elements and mechanics to increase user engagement in non-game contexts such as business or education (Domínguez, Saenz-De-Navarrete, De-Marcos, Fernández-Sanz, Pagés, and Martínez-Herráiz, 2013).

*Human Computer Interface (HCI)*: a discipline concerned with the design, evaluation, implementation of, and interaction between technology and the people who use it (Guney, 2019).

*Museological*: relating to the field of museology, a theory-based scientific discipline that seeks to understand the relationship between people and reality while preserving individual elements of society so that they may be used to further research (Stránský, 1970).

*Physical Context*: refers to the physical space that the adult learner navigates and is comprised of all that the learner encounters in the museum, including but not limited to exhibits (Geismar, 2018).

*Self-Directed Learner*: a learner who is self-motivated, sets their own learning outcomes, and has access to all the required resources for their learning (Knowles, 1975).

*User Experience (UX)*: refers to a disciplinary, methodological, and user-centric way of designing the user's experience when using an interface, a digital device, or service (Meftah, Retbi, Bennani, and Idrissi, 2019).

*Visitor-centered*: a perspective focused on the perceived value of a museum to both current and potential visitors that emphasizes the satisfaction of the individual's needs over outcomes (Falk, 2016).

*Web Content Analysis (WebCA)*: a narrow application of traditional content analysis methods to the web (Herring, 2010).

## **Conclusion**

Museums face challenges attracting adult learners of diverse backgrounds and implementing effective programs and support systems to ensure that they are engaged and benefit from their visit. The role of the museum is integral to the dialectical process of education and personal growth of adult learners, as adult learners are personally responsible for their learning (McCray, 2016). Websites are unique expressions of contemporary culture and a vast repository of potential data (Pauwels, 2012). Understanding how museums communicate the value of the digital experience in museums to the adult museumgoer is the aim of this study.

Chapter Two will examine the existing literature, identify knowledge gaps, and highlight important issues and trends relevant to this study. Chapter Three will present the research methodology that was utilized in this study, research design, data collection procedures, and analysis, as well as the study's limitations, credibility, transferability, and dependability.



## CHAPTER 2

### LITERATURE REVIEW

Museums often use an integrated approach to their marketing communications, which includes the use of computer-mediated communication (CMC) to communicate their mission, vision, and values. The museum is both a social and educational organization, and as such, it affords numerous opportunities for adult learners. Moreover, questions that explore CMC, such as how mediated content communicates the value of digital technology to the adult learner, could prove valuable to researchers and museum leaders. While this study's focus is not on the value of digital technology itself, understanding the development and value of museum technologies helps provide a foundation for understanding context. The research question relates to the literature review, which examines the landscape of digital technology in the museum and how it relates to communicating its value. The intention of this study was to investigate how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers.

This integrative literature review synthesized the existing literature and highlights important issues and trends in the body of scholarship by shaping a coherent argument within a comprehensive, systematic structure (Torraco, 2005). The objective of this chapter was to review, integrate, and interpret findings from selected studies addressing the topics of digital communication in museums, along with a special review of literature focused on the value of the digital experience in museums. It elucidated how museum technology is integral not only to a dialectical process of education but also to the personal growth of adult learners. It also identified how research methods and theories have shaped the literature's outcomes, strengths, and weaknesses to improve evidence-based decision-making (Callahan, 2014). Since this study

sought to examine mediated communication, literature that focused on communications was discussed. The review of literature also focused on discussion of general organizational communication and museum technology research studies as well as case-specific studies. This review of the literature examines different theories and models and how museum leaders communicate the value of digital experiences to adult museumgoers. The existing literature identifies common themes related to the efficacy of technology in the museum setting. A broad range of theoretical stances and models on digital technologies emerged throughout the literature that supported the use of technologies in the museum. The predominant theories and models in the literature were self-determination theory, intrinsic motivation, interactive theory, and the contextual learning model.

Self-determination theory and its related theory of intrinsic motivation, theories of motivation developed by Deci and Ryan (2000), part of the hierarchical model of intrinsic and extrinsic motivation (Vallerand, 2000), are also used to understand the effects of digital media on learning outcomes in students visiting museums. To better understand how museums can use digital technology to improve learning outcomes for adult learners, this study used the contextual model of learning (Falk and Dierking, 2013), a visitor-centered perspective in which all experience and learning are contextual. Falk and Dierking (2013) base this theoretical framework in three contexts: personal, physical, and socio-cultural. Several variables influence how museum visitors learn. Therefore, understanding the visitor is crucial to making museum education meaningful (Chang, 2006). Similar to the interactive theory, the contextual model of learning is visitor-centered. However, it can be scaled up or down to meet the needs of any museum (Caspani et al., 2017).

This literature review used targeted keyword searches to find academic, peer-reviewed journal articles, dissertations, and government agencies to support the topic. The keywords used included: interactive theory, user experience, the contextual model of learning, museum technology, museology, and information technology leadership. These keyword searches were conducted in ERIC–EBSCO, ProQuest, and LexisNexis Academic Universe, and Google Scholar. Supplementary articles were obtained by utilizing the reference list at the end of each text. To augment this literature review, digital resources and books on museum management and communication theory were used.

To support and contextualize the questions outlined in the previous chapter, this literature review begins with the conceptual framework that includes Falk and Dierking's (2013) contextual model of learning. The conceptual framework is followed by an integrative review of the literature that consists of a general background of the emergence of educational technology used in museums, the context and significance of digital technology in museums, and differences in adult learning. Chapter two concludes with a review of studies that address the changing needs of adult learners in a 21st-century museum.

### **The Role of Technology in the Museum**

Museum leaders face the challenge of how to integrate digital technology into the visitor experience successfully. For leadership to be effective, it must have a clear making-a-difference sense of purpose and be held accountable by measured and debatable indicators of success (Fullan, 2015). Within cultural institutions, digital technology integration is an area large in context, the pedagogical value of which is paramount to its success (Falk et al., 2016). There are many findings within the literature suggesting that digital technology in cultural institutions, like museums, may impact the learning of a museumgoer. Therefore, accessibility, engagement, and

learning retention are critical variables to highlight when communicating the value of digital technology (Falk, Dierking, and Semmel, 2016). While many researchers have given information technology a great deal of attention, more research is needed to determine the pedagogical value of technology on critical variables within the museum context (Everett and Barrett, 2011). Thus, not all museums recognize or communicate the value of digital technology equally.

In an examination of the intersection of digital and analog media within museum practices, Geismar (2018) studied the technologies of the exhibition, classification, archiving, and collection through a narrative survey of data. He argued that the museum educator must pay attention to the specific context and materiality of digital objects and that digital media in museums exist in a long-standing continuum or process of mediation, technological mimesis, and objectification. Through an investigation of current trends and practices, Geismar (2018) implores museum educators to be scholars of material culture, understanding the social significance of objects and how the organization of things mirrors the epistemologies and classificatory principles that enable us to understand the world. Object lessons in museums present contemporary meanings and narratives around collections but also highlight the processes through which knowledge is constructed. The history of museums tends to be presented in a linear narrative in which collections are ordered through increasingly systematic classification, at the same time, becoming more public (Falk and Dierking, 2013).

Gold and Klein (2016) addressed the burgeoning excitement over digital technologies in history in the early days of its acceptance. However, they demonstrated that even with this excitement, public history began to move away from ideology and theory in favor of developing new tools, methods, materials, techniques, and modes of work (p. 602). The authors stressed the importance of using new technologies in museums and public history, referring to what he calls

the “promise of digital history” (p. 122). Using multiple variables, the researchers established a point of general scholarly acceptance during the early days of the Digital Revolution. They analyzed early failures in digital learning, as well as successes, published the same year that had the American Historical Association (AHA) Conference to include twenty panels on the topic of digital technologies in museums. Much like Falk et al., (2013), Gold and Klein (2016) support the use of digital technologies in museum displays and their pedagogical value by giving me specific viewpoints on the use of emerging technologies.

However, the findings of Gold and Klein (2016) did not confirm those of Mura (2009), who questioned which features of technology contributed most to the phenomenological experience in museums. Mura (2009) used a framework of interpretive archaeology and phenomenology in museums by surveying three focus groups and a field study in a museum setting. The study showed how an increase in digital media use also increases demands on learners, as indicated by relatively high dropout rates and a diminished ability to focus during learning. Loon, Ros, and Martens (2012) made a similar claim. They argued that too much available information could distract from learning objectives, pointing out that scholars have paid little attention to the evaluation of user experience (UX) with technologies in cultural heritage environments. They conclude that there is a need for more research in the fields of information systems and museology.

### **Conceptual Framework**

Ravitch and Riggan (2017) argue that a conceptual framework is needed in empirical research because it can help resolve two common challenges researchers face when undertaking a research project. The first problem with understanding a conceptual framework is the lack of a clear understanding of the term theory. Ravitch and Riggan (2017) propose that there is

confusion about the role and purpose of literature review as part of the empirical research process due to a conflation of terminology, in addition to the interplay between concepts, theories, frameworks, and methods. Secondly, Ravitch and Riggan (2017) establish that, while researchers use theory to show the relationships between concepts, they differ significantly in the degree to which they theorize into the research process itself. A conceptual framework, as described by Ravitch and Riggan (2017), is defined by three key elements: personal interests, topical research, and theoretical frameworks. All three of these elements are integrative aspects of the conceptual framework and are connected to support or frame the research by identifying and examining relationships among things (Ravitch and Riggan, 2017). This literature review uses an integrative approach to serve as a comprehensive synthesis of all the research literature about the topic.

Museums face challenges attracting adult learners and implementing effective programs and support systems to ensure that they are engaged and benefitted. The museum's role is integral not only to this dialectical process of education but also to the personal growth of adult learners (McCray, 2016). Knowles (1959) introduced andragogy and reframed adult education from educating people to helping them learn. Unlike pedagogy, self-directed learning is a distinct feature of andragogy. As Knowles (1990) explains, self-directed learners initiate the learning process and learn more effectively and efficiently than reactive learners. More so than with children, self-directed learners require varying degrees of support and direction. As a consequence, they are likely to be engaged in non-formal learning as informal learning (Knowles 1990). As self-directed learners, adults must navigate the digital museum environment, making it important to the learner's motivation to learn, as well as the learning process. Adult learners are personally responsible for their own learning (McCray, 2016). The motivations to

learn can be conscious but are more often unconscious in the adult learner (Falk, 2020). These motivations are closely linked to identity. Each person visits a museum to satisfy their own identity-related needs (Falk, 2020). Falk (2020) differentiates between what he calls “big-I” identity and “small-I” identity. Examples of big-I identity are demographic descriptors like race, gender, and culture, whereas small-I identity is how we see ourselves that are for frequently changing like student, teacher, mother, niece, etc. (Falk, 2020). While museumgoers are not always conscious of their identity-related needs, they often express them in their actions (Falk, 2020).

### **Theoretical Framework**

**Contextual Model of Learning.** Several variables influence how museum visitors learn, so a useful framework must be able to scale with the needs of a museum (Falk and Dierking, 2013). The contextual model of learning is visitor-centered, like interactive theory, but far more flexible in its application (Caspani et al., 2017). To better understand how museums communicate the value of digital technology to adult learners, this study uses the contextual model of learning (Falk and Dierking, 2013), a visitor-centered perspective in which all experiences and learning are contextual. Falk and Dierking (2013) base this theoretical framework on three contexts: personal, physical, and socio-cultural. In developing their model, Falk and Dierking (2013) emphasize that these dimensions are not fixed in time but rather remain open to reinterpretation as new experiences are gained.

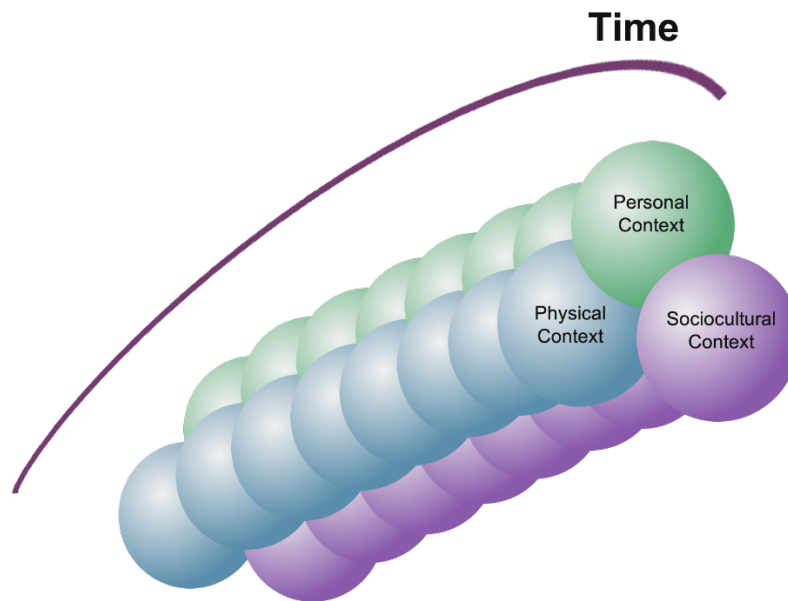


Figure 1: Contextual model of learning

The personal context is what the visitor brings to the museum. Individuals visit museums for a wide range of reasons. As such, the museum visit will be understood through the lens of the museumgoer's individual experiences. The physical context is the physical space that the guest is in, including objects, the individual rooms, the building, the smell, the mood, etc. The socio-cultural context is the other people with whom the guest interacts at the museum (Falk and Dierking, 2013). All of these variables add to the museumgoer's experience. The contextual model of learning also recognizes the impact of prior knowledge, interests, and beliefs on learning and explains that it is not the motivation to want to learn that induces the highest level of learning but the motivation to want to live a pleasant experience (Falk and Dierking, 2016).

The strength of the contextual model of learning is that it recognizes the impact of prior knowledge, interests, and beliefs on learning and explains that it is not the motivation to want to learn which induces the highest level of learning but the motivation to want to live a pleasant experience (Falk and Dierking, 2016). The contextual model of learning was developed with the intention of structuring practices and research learning in museums and other informal learning



environments (Falk and Dierking, 2016). While it addresses many vital components to effective museology, a glaring weakness is that it does not explicitly reference socio-cultural theory. Since the model relies on interpersonal mediation and not factors associated with a socio-cultural context, the model is limited. This approach emphasizes the importance of space and experience in the museum experience, making the contextual model of learning a robust theoretical framework for this study.

### **The Changing Role of Digital Technology in Museums**

Falk et al. (2016) stressed the importance of digital technologies in museums, including increased accessibility. They support the use of digital technologies in museum displays and their pedagogical value by elucidating specific viewpoints on the use of emerging technologies, reiterating that they are just tools to be selectively used by the public. How the public will use these tools depends on several factors, including socioeconomic variables, demographics, and motivation. In earlier work, Falk and Dierking (2013) analyzed individual essays, audience surveys, and reports to address the pedagogical value of digital media and help museums in their efforts to engage and educate museumgoers. These qualitative methods have continued to help museum leaders measure learning in their organization and document the memories recounted years or even decades after the visits (Parry, 2010).

Technology is expanding at a rapid pace, while museum educators are still unsure about the effect of digital displays on learning (Parry, 2010). Efforts to effectively integrate technology with museum education is early as 1943; the use of radio and television media in museums was discussed in the article, "The Museum as a Social Instrument" (Brown and Low, 1943). By the early 1950s, the industry publication, *Museum News*, had published three articles on similar subjects, including the role of television and radio in museums (Roberts, 1997).

Museums adapted to technology over time. The invention and popularity of the internet encouraged museums to try to incorporate digital technology into the museum experience to help them compete for new audiences (Thorburn and Jenkins, 2003). While Thorburn and Jenkins (2003) agree there is a pedagogical value to using technology in museums, they are careful to point out that it should not overshadow the actual artifact. Similarly, Thomas and Mintz (2000) believed that a virtual visit to a museum is not a true museum experience for this very reason. Instead, it is fundamentally a media experience (Thomas and Mintz, 2000).

Modern museums are focused on integrating technology into their education strategies because they recognize their role is not to simply store objects of interest, but instead, their job is to educate (Parry, 2010). There is a shift towards gamifying information, creating a sort of edutainment experience for the museumgoer (Gilmore and Rentschler, 2002). Museum leaders have combined education and entertainment to reach audiences with different learning capabilities and interests, which helps them develop strategies for both the custodial role and visitor attraction (Gilmore and Rentschler, 2002). As Collins and Halverson (2009) suggest, this technology is sometimes seen as diversionary threats to the integrity of the educational missions of the organizations. Past views on the role of digital technology in museums have changed over time. However, as digital technology emerged, the excitement over new possibilities recharged scholars, opened new channels to network with other historians and the general public, and created new methodologies (Kyvig and Myron, 2010).

### **Museum Communication**

During the 1990s, museums began to establish marketing departments and shifted to a visitor-orientated approach (Mudzanani, 2017). This shift meant that visitors were no longer perceived as just a passive audience (Mudzanani, 2017). Museums have since become more

market-orientated, as leaders realized that effective marketing could help museums shift negative perceptions, including the perception that museums are boring storehouses of objects (Mudzanani, 2017). Additionally, changes in digital technology<sup>0</sup> have made it essential for museums to inform stakeholders about their programs and digital offerings (Mudzanani, 2017). Mudzanani (2017) describes museum marketing as a management process that validates the mission of a museum and is responsible for the efficient identification, anticipation, and satisfaction of its users. A vital component of this process is visitor feedback, which is acquired in many ways, including surveys, social media comments, and web analytics. Surveys are used most often, as they are easy to assemble and administer (Antioco and Coussement, 2018). However, there are many sources of error that can contaminate survey results, including administrator bias (Antioco and Coussement, 2018).

Marketing managers and museum leaders evaluate data in a mostly visual form such as charts, tables, and graphs (Lurie and Mason, 2007). Visual representations of data, in particular, influence the decision-making processes based on which factors are valued by leadership (Lurie and Mason, 2007). Novice decision-makers tend to use information as it is presented, seeing the data at face-value (Lurie and Mason, 2007). By contrast, expert decision-makers are likely to moderate the visual representations by drawing on intuitive approaches like associative reasoning (Lurie and Mason, 2007). Intuitive approaches, however, can lead to incorrect conclusions because of biases in interpretation (Lurie and Mason, 2007), which can influence the messaging of the museum's marketing.

Moreover, the existing literature is focused on offering museum visitors a wide range of choices, thanks to the opportunities provided by new technologies (Cerquetti and Ferrara, 2018). As a result, museum leaders have seen digital technology within museums as an attempt to get

closer to visitors, who are perceived as seeking intelligent, fun, interactive education and overall immersive experiences (Cerquetti and Ferrara, 2018). In addition to visitor-oriented perceptions, overall skepticism about the value of digital technology is still present among museum professionals, creating a persistent gap between theory and practice (Cerquetti and Ferrara, 2018). The museum environment is an important emerging field of study for information science (Marty, 2017). There is a large body of literature highlighting the importance of the changing information needs of museums (Thomas and Mintz, 1998). However, the literature is primarily focused on information storage and retrieval practices, issues of electronic classification and nomenclature, and database design and development (Marty, 2017). There is little available on computer-mediated communication (CMC) and how museums use this method to communicate the value of their digital technology.

### **The Needs of Adult Museumgoers**

A review of the literature shows no consensus among museum professionals about the impact of digital technologies in museums on the personal growth of adult museumgoers. The relative newness of digital technology and museums' slow adoption contribute to knowledge gaps within the literature. One notable gap in the literature is the analysis of the different learning styles between the way children and adults learn through technology. Often adult learners are out of the discussion because of an absence of adult education and learning theory in museum studies (McCray, 2016). At the same time, much of a museum's energy is spent on attracting adults to their institutions. For museum leaders to fill in the participation gap, they will need to adapt their marketing, programming, and infrastructure (Traboulsi, Frau, and Cabiddu, 2018).

In a study assessing the learning performance and user experience between two groups of elementary school children, Zaharias, Michael, and Yiorgos (2013) took one group through a museum exhibit that was deemed traditional with printed maps. The other group was directed to a virtual exhibit where students interacted with multi-touch applications. The results showed that the groups had no statistically significant differences in learning performance (Zaharias et al., 2013, p. 374). Further, Zaharias et al. (2013) demonstrated that, while not statistically significant, the traditional group did perform higher (p. 381). The data and analysis establish a learning pattern in children, which can later be measured against a similarly structured experiment using adults. Moreover, the attention spans of children differ from those of adults. The results of learning performance show that the traditional group performed higher, suggesting considerations need to be made in the interest of educating a broad range of museum visitors (Zaharias et al., 2013). The data and analysis in this article provide a relevant comparison of learning outcomes with which to discuss. The study results suggest that a virtual visit to a museum is fundamentally a media experience, not a museum. It further indicates that the use of new types of interactive systems contributes to visitors' experience in museums, enhancing their level of active participation and engagement and their intention to repeat visits (Zaharias et al., 2013).

Considerations about how to enhance participation and engagement are especially important for visitors needing varied modes of learning like children, the elderly, or those with learning disabilities (Falk et al., 2016). Current research suggests that digital technology enriches the theoretical perspective of perceived value in senior museumgoers (55+ years old) and elucidates the different dimensions of this value (Traboulsi et al., 2018). This research also showed that seniors favor human interaction and engagement in the physical context over the use

of digital technology (Traboulsi et al., 2018). Even so, the way in which the museum displays its technical services still has great importance in attracting the attention of seniors (Traboulsi et al., 2018). Further, understanding how those with learning disabilities perceive digital technology in the museum is not just about marketing but also access. Access is more than removing physical or sensory barriers. In the 21st century museum, access describes broader issues associated with the idea of barriers, such as intellectual, cultural, attitudinal/social, and financial (Lang, 2017).

### **Phenomenology of Information Technology**

Harrell and Kotecki (2015) examined whether the six phenomenological criteria suggested by Monod and Klein are relevant to the assessment of visitor experience with IT in museums multi-methodology, mixing focus groups, and a field study based on questionnaires. The results confirm the value of a phenomenological approach in assessing visitor experience in museums. Visitors who used the provided technologies found that these devices helped them to project themselves into the lives of the characters. Results supported and legitimized the presence of digital technology in museums. More precisely, the technologies studied at NCHI do contribute to a positive experience, suggesting that blended learning can be a useful tool to deepen learning before and after a museum visit (Harrell and Kotecki, 2015).

Jewitt (2012) used a multimodal semiotic approach, drawing on a range of research data, observations of the exhibition and visitor interaction, literature, news, and media commentary related to the exhibit, including curator interviews, and official and unofficial online data connected to the exhibits. The results showed that technology in museums and galleries does not always expand the visitor experience in these ways. The study showed the potential of digital technologies to transform the relationship of the visitor to the exhibit remains, as well as how too much available information can cause school children to become distracted and lost in digital

space (Loon et al., 2012). The data suggested a positive outcome of using digital technologies, whereas this article offers an alternative conclusion. While digital technology in museums can have a positive impact on adult learners, technologies such as mobile apps and digital guides may exclude those in more vulnerable communities. According to Reisman (2008), social interaction is key in building knowledge, but it takes different approaches and environments to teach the many different types of learners.

**Interactivity.** Sungkur, Panchoo, and Bhoyroo (2016) presented augmented reality (AR) as the future of contextual mobile learning. Their study showed the relevance of AR in mobile learning for the 21st century. AR is expected to boost the interest of learners with 3D simulations, having the potential to provide a more efficient education in academic institutions, as it can present users with information corresponding to a particular location and time (Sungkur et al., 2016). AR enables students to learn constructively in a new authentic way through motivating and captivating environments and can visualize the outline of characters by displaying the silhouette of historical individuals and other famous personalities to present users with a more constructive learning environment. Sungkur et al. (2016) proposed using the contextual model of learning to engage and educate museumgoers, suggesting that face-to-face teaching techniques reduce visitor satiation and fatigue, thereby extending time spent on exhibits. In addition to interactivity with digital technology showing a positive connection to learning, a study comparing two target populations of young adults (18–21 years) and the elderly (65 years and older) demonstrated digital technology could elicit emotional responses from older and younger people (Alelis, Bobrowicz, and Ang, 2015). Participants were shown cultural heritage artifacts in three different modalities: augmented reality on a tablet, 3D models on a laptop, and finally, physical artifacts (Alelis et al., 2015). The study analyzed the time spent, enjoyment, and

emotional responses of the respondents (Alelis et al., 2015). The study found that digital modalities were enjoyable by all ages and encouraged emotional responses (Alelis et al., 2015).

**User Experience (UX) in Museums.** Museumgoers' enjoyment and emotional responses can be influenced by user experience or UX. The UX refers to a disciplinary, methodological, and user-centric way of designing the user's experience when using an interface, a digital device, or service (Meftah, Retbi, Bennani, and Idrissi, 2019). UX originated as an idea in computer science, but its principles reached into other disciplines. The term UX was first mentioned by cognitive scientist Donald Norman (Norman, Miller, and Henderson, 1995). While working at Apple in the 1990a, Norman designed ways humans could effectively interface with computers, referring to UX as a critical aspect of human interface (Norman et al., 1995). Ever since, the concept of UX has become an important concept related to the way people use an interactive product (Meftah et al., 2019). What makes UX different from usability is the user's feeling (Meftah et al., 2019). This qualitative feature of UX broadens its scope to encompass a much broader consideration than the prober's use of an interface (Meftah et al., 2019). In this expanded definition, UX links disciplines like information technology, information architecture, interaction design, service design, etc. (Meftah et al., 2019). UX is not strictly pragmatic and limited to ease of use. Instead, UX refers to the responses and perceptions of a person that results from the use or anticipation of the use of a product or service (Meftah et al., 2019). Since the goals in museums are different from other venues like theme parks or retail centers, taking UX into account is essential to meeting the needs of museumgoers under the contextual model of learning. As Falk (2020) pointed out, museumgoers use the institution to meet their unique identity-related needs and qualitatively build experiences that help facilitate these needs.



In exhibits that offer no option for direct artifact interaction or physical experience, technology like computers and kiosks can offer sensory experiences such as hearing, touch, and sight are the most solicited senses, which museumgoers have claimed allow them to mentally experience historical events (Pallud and Monod, 2010). Pallud and Monod (2010) point out that other sensory experiences such as taste and smell are not easily experienced through digital technology, but emerging technologies such as 3D or VR systems may be a means of addressing this limitation. To create an immersive and interactive environment sometimes requires multiple devices or sensors to cover all the primary senses and may not be able to truly substitute the experience of physical objects displayed in museums (Pallud and Monod, 2010). Outcomes can be measured by qualitative surveys of museumgoer satisfaction, more frequent visitors, community engagement, and increases in donations.

### **Adult Learners in a 21st Century Museum**

**Self-Directed Learning.** There are marked differences in how technology helps children learn compared to adults. Too much available information can cause school children to become distracted (Loon et al., 2012), but can the same be said for adults? So far, attempts to use surveys to understand how children respond to exhibits have yielded unreliable results because of the communication barrier between parents and children, especially if the child is very young. Most of the literature shows that museumgoers between the ages of 25 and 44 and children between the ages of five and nine are disproportionately the highest groups represented (Chang, 2012). Also, the largest category of visitors is often elementary-aged children because of school field trips and their inclusion in family group attendance (Chang, 2012, p. 172).

In case studies examined by (Loon et al., 2012) research points to the different ways digital learning tasks contribute to museum visitor's intrinsic motivation and learning outcomes.

Through a survey of 320 fifth and sixth-grade students from eight elementary schools throughout the Netherlands, research showed that a digital learning task that combined autonomy support and structure had a positive effect on both intrinsic motivation and learning outcomes in students. The study found that an increase in digital media use also increases learners' demands, as indicated by relatively high dropout rates and a diminished ability to focus during learning. Black (2012) argues that museums must transform themselves if they are to remain relevant to contemporary audiences, in contrast to much earlier theories by Bitgood et al, (1988), which validate the functional relationship between the characteristics of exhibits and visitor reactions.

There is a commensurate body of research specifically aimed at understanding the effects of digital displays and technologies in museums on the knowledge construction of children. This is unsurprising considering the large number of children visiting museums. However, adults in various life stages are not well represented in the literature. How and why adults learn is very different from children. Adults are self-directed learners, preferring to plan and direct their own learning (Mccray, 2016). To plan and direct learning involves not only a mastery of skills that children do not have but also a more sophisticated view of the learning process grounded in experience and identity (Mccray, 2016). The adult's ability to engage with educational material in more meaningful ways presents a challenge to museum educators since adults bring their own diverse backgrounds and unique needs to the learning environment. With this challenge, however, comes the opportunity to develop new ways to attract and engage these learners.

**Contextual Model of Learning.** Inspired by the work of Falk et al. (2013), Chang (2006) proposed the use of the contextual model of learning to engage and educate museumgoers. He acknowledged that many variables influence how museum visitors learn, concluding that it is how a museum understands its visitors that determines how meaningful their

education is (Chang, 2006). Chang's research demonstrated how information display techniques reduce visitor satiation and fatigue, which in turn extend the time spent at exhibits.

Eghbal-Azar et al. (2016) suggested that media may improve learning and retention, recommending that guided tours should be used more in museum education because they allow educators the ability to save time by explaining a predefined subset of exhibition highlights. However, while this study produced compelling results to support the use of digital displays to augment learning, Thomas and Mintz (2000) proposed that media, online exhibits, and virtual tours are often misused in the museum setting, arguing that a visit to a physical location is required to be considered a museum experience. These early views of technology persist in contemporary literature. Further to the point, Loon et al. (2012) postulated that, while digital media can provide learners a context that is both rich and realistic, the volume of the available information may cause them to become distracted from their learning goals by irrelevant information. This can result in the learner focusing only on superficial information (Loon et al., 2012). Further, an increase in digital media use increases demands on learners, as indicated by relatively high disengagement rates and a diminished ability to focus during learning (Clark et al. 2010; Mayer 2011).

The introduction of new technologies in museums has enhanced how visitors perceive cultural objects. However, as Tesoriero, Gallud, Lozano, and Penichet (2014) argue, these technologies have not been as successful as museum audio guides because they are less often used. To test the real-world application of various technologies, Tesoriero et al. (2014) designed and developed mobile software for art museums that uses a handheld device equipped with navigation and GPS software to see if these tools can help improve location awareness, internationalization, HCI patterns, language adaptation, and accessibility. The software

applications were designed using a visitor-centered perspective with the aim of improving visitors' satisfaction (Tesoriero et al., 2014). Participants used the device while visiting a real-world museum, the Cutlery Museum of Albacete, after which usability evaluations were performed on the first application, definition, implementation, and evaluation of the technology (Tesoriero et al., 2014). Researchers found that, although wearable technology has improved museum experiences, the exhibitions are not proven to be ideal scenarios to apply augmented reality (Tesoriero et al., 2014).

**Technology Efficacy.** Technology in museums and galleries can enhance the visitor experience. Observational studies in Germany's Museum of Modern Literature nexus exhibition on 20th and 21st-century German literature aimed to determine the distribution of visitor stops across the exhibition on showcase level. Using two observational studies of exhibit visitor behavior, researchers found visitors utilizing a digital guide on their mobile device spent about 60% more time in the exhibition and also scrutinized individual exhibits more extensively (Eghbal-Azar et al., 2016). The study identified key factors that influenced what exhibits visitors would choose to learn more about from the mobile guide. Important factors were the exhibit's position in the gallery, visible features, and its popularity based on search engine hits and getting labeled as highlights on an information sheet (Eghbal-Azar et al., 2016).

While mobile media may encourage learning in museums and exhibitions, other researchers have proposed that gamifying learning is also an effective way of promoting engagement and learning with technology. Leftheriotis et al. (2017) found that gamifying informal learning activities using multi-touch displays could promote students' learning and engagement, especially when these applications are integrated within an informal learning activity, such as a school trip, as well as traditional school lessons. A field study of students and

an analysis of empirical data demonstrated that students enjoyed the game and were actively engaged (Leftheriotis et al., 2017). They also liked playing in groups or competing with each other and were more engaged while playing with the interactive surface. The research validated previous studies that showed significant improvement in learner's engagement. However, the effects of gamification are much dependent on the context (Leftheriotis et al., 2017).

Caspani et al. (2017) propose that digital museums should be more than just a media experience, but effective execution of digital technology is not yet fully actualized in the museum experience. Through a direct investigation study, Caspani et al. (2017) found that new models of historical narratives are already available through digital storytelling tools, notably social media applications. These tools allow medium-small museums and private users to create digital museum experiences through social media (Caspani et al., 2017, p. 134). Social media could allow museumgoers to contribute or write their own cultural stories directly so that their stories can create meaning, making it more accessible and comprehensible to learners. Moreover, mobile apps can keep visitors and stakeholders connected to and engaged with the organization more regularly.

While museumgoers may enjoy using digital technologies and interactive exhibits, a review of the literature shows that digital technology has a substantial pedagogical value when incorporated into more traditional museum exhibits (Falk et al., 2016). The existing literature identified common themes related to the efficacy of technology in the museum setting, such as phenomenology and accessibility. Various theoretical frameworks and models emerged throughout the literature that supported the use of technologies in the museum. The most relevant to this study are the works of prominent authors such as Falk, Dierking, and Semmel (2016). The contextual model of learning has been used to analyze multiple types of museum visitors, such as

family groups, adult groups, and school field trip groups. Gold and Klein (2016) also used the contextual model of learning in their research to stress the importance of using new technologies in museums and public history. Sungkur et al., (2016) proposed the use of the contextual model of learning in order to engage and educate museumgoers using augmented reality (AR) in mobile learning. The authors presented augmented reality as the future of contextual mobile learning. Their study shows the relevance of augmented reality (AR) in mobile learning for the 21st century. The results showed that AR enables students to learn constructively in a new authentic way through motivating and captivating environments and can visualize the outline of characters by displaying the silhouette of historical individuals and other famous personalities to present users with a more constructive learning environment.

Loon, et al. (2012) used case studies to examine the different ways digital learning tasks contribute to a museum visitor's intrinsic motivation and learning outcomes. Through a survey of 320 fifth- and sixth-grade students from eight elementary schools throughout the Netherlands, research showed that a digital learning task that combined autonomy support and structure had a positive effect on both intrinsic motivation and learning outcomes in students. The study finds that an increase in digital media use also increases demands on learners, as indicated by relatively high dropout rates and a diminished ability to focus during learning.

Pallud and Monod (2010) used case studies to examine the different ways digital learning tasks contribute to the museum visitor's intrinsic motivation and learning outcomes. By using Self-determination Theory as a framework for their study, Pallud and Monod (2010) were able to demonstrate how digital learning tasks that combined autonomy, support, and structure had a positive effect on both intrinsic motivation and learning outcomes in students. Finally, Tesoriero et al. (2014) designed and developed mobile software for art museums based on personal digital

assistant technology and tested it over a four year period for a case study. For their case study, the researchers used the contextual model of learning and determined that software such as PDA, Navigation, and GPS can improve location awareness, internationalization, language adaptation, and accessibility in museums.

Over time, museums have evolved to include numerous technological advances. New approaches in understanding museum visitors have moved beyond surveys and casual observation and now includes quantitative research methods, as well as multi-disciplinary approaches, as seen in the earlier studies of Bitgood et al. (1988), Chung (2016), and Eghbal-Azar et al. (2016). Rather than a technological “wild west,” there are now stated goals guiding the use of technology which has changed the landscape of museum learning by motivating museum educators to look for resources tailored specifically to understanding the needs of adults, such as how to best train teaching staff so that they can engage adult visitors in more meaningful ways (Mccray, 2016). One goal for guiding the use of technology to meet the needs of adult learners, as proposed by Falk et al. (2016), is to recognize, remember, and respond to the needs and interests of individual visitors with the hope to support learning as well as exploit emerging technologies for real-time assessments and evaluations. However, opportunities for further research into the pedagogical value of digital technology in history museums must be performed soon because as museums begin to favor multi-media approaches, the opportunities for comparative analysis decrease (Falk et al., 2016).

### **Computer-mediated Communication (CMC)**

CMC applies to all forms of communication that take place using from form of computer technology (Monberg, 2005). The research available on CMC is broadly interdisciplinary, encompassing theoretical, empirical and applied perspectives (Herring, 2014). Digital

communication research has sought to clarify the role of mediated communication, differentiating it from web design. Museums use digital media and incorporate digital technology in the way it communicates through their websites and social media. Thus, it is necessary to explore the history and nature of computer-mediated communication to understand better how digital technology may function within the museum's media and marketing strategies. CMC can be traced as far back as the first electronic digital computer during World War II but is often considered to have developed after the exchange of prototype emails in the early 1960s (Thurlow et al., 2017). By the 1990s, personal computers had become a fixture in offices, schools, and homes (Thurlow et al., 2017). However, prior to the mid-1990s, there was no substantial academic interest in how people interacted with, and communicated through, computer technology (Thurlow et al., 2017). Instead, research was primarily concerned with the information processing, data transfer, and hardware design. Scholarly publications started to look more closely at CMC. These include the *Journal of Computer-Mediated Communication* (JCMC) and *Computers in Human Behavior*.

When considering CMC, technological mediation involves more than television, radio, and the press. Rather than studying the medium, scholars studying CMC are concerned with the social interaction that occurs by implementing digital communication technology (Thurlow et al., 2017). Identity, relationship, and community are the issues and concerns are central to CMC, not the machinery designed, built and used for the purposes of information exchange (Thurlow et al., 2017). Studying CMC is that we can learn more about the nature of human communication when we look to see how it is affected by technology (Thurlow et al., 2017).



## Conclusion

The role of the literature review in scholarship is viewed in numerous ways. It can be a reflection of the researcher's own rigorous academic experience, similar to a rite of passage, or it can merely be a demonstration of expertise about a topic (Ravich and Riggan, 2017). The literature review is also seen as a way to contextualize a topic with empirical work to help fill gaps in the literature. This literature review process has elucidated common themes surrounding the value of digital technology to learners in the museum setting: accessibility, engagement, and learning retention. Numerous scholarly works are available which aim to measure the pedagogical impact of these new technologies. A common theme within the literature is the need for a more in-depth study of the digital museum experience, which includes CMC. The physical context, the physical space that the adult learners navigate, is comprised of all that the learner encounters in the museum (Geismar, 2018), but CMC such as a museum's website and social media play an important role in museum education and outreach and are not merely digital objects within the context of the physical space (Geismar, 2018). Technology is dependent on context (Leftheriotis et al., 2017). By clearly identifying the social significance of tangible objects and their relationship to the digital landscape, museum leaders can foster a more effective learning process in museums and exhibitions (Eghbal-Azar et al., 2016). Further, while digital technology can enhance the learners' experience by providing them with multiple learning options, so many available choices may lead to distraction, exhaustion, and a diminished ability to focus during learning (Loon et al., 2012; Clark et al. 2010; Mayer 2011).

Prominent authors on this topic, such as Falk et al. (2016) and Gold and Klein (2016), often use the interactive experience model and contextual model of learning to analyze multiple types of museum visitors and their technology use. While each theoretical framework has

weaknesses, they both take into consideration the importance of space and experience on an individual level. More empirical research is needed pertaining to socioeconomic variables and how technologies such as mobile apps and digital guides may exclude vulnerable communities.

This chapter examined the accumulated state of knowledge, gaps, and alignments, in the literature relevant to this study. Chapter Three presents the research methodology that was utilized in this study, research design, data collection procedures, and analysis, as well as the study's limitations, credibility, transferability, and dependability. Chapter Four presents the research findings. Chapter Five provides an overview of the research, discussion, implications of the study, and recommendations for future research.

## CHAPTER 3

### METHODOLOGY

Curators and educators view the incorporation of digital technology into the museum experience as a way to enhance visitor learning, attract more visitors, and increase the value of cultural heritage (Li and Liew, 2015). However, museological debates have centered on balancing the need to conserve, preserve, and exhibit material objects while engaging and inspiring museum audiences (Hughes and Moscardo, 2017). Digital technology can provide museumgoers with an expanded view of cultural history (Pierroux, Krange, and Sem, 2011). Museums can use technology to create social spaces where objects, labels, activities, and conversations can affect how visitors make meaning of their experience (Pierroux et al., 2011). As discussed in Chapter 2, much of the existing research examines the pedagogical value of digital technology in the museum environment, rather than how value is communicated. Indeed, museums can produce positive outcomes in learning and engagement when incorporating digital technology (Mccray, 2016); however, the literature suggests that an understudied area in museum technology is computer-mediated communication (CMC's) use in communicating value to adult museumgoers. Research conducted on museum visitors' various motivations, interests, and experiences suggests ways museums can meet museumgoers' diverse needs (Falk and Dierking, 2000). Adults represent a large and growing segment of museum visitors and have different needs and motivations than children when visiting a museum. Education is a crucial consideration that adult museumgoers have when deciding whether to visit a museum in-person or remotely (Griffiths, 2008). However, adults who engage with museums do so almost as equally in-person (87%) as remotely via the internet (86%) (Griffiths, 2008). While studies that showed digital technology positively influence museumgoers' learning and engagement, limited

studies investigated how adults respond to the same variables or whether they see technology as value-added museum offerings.

This study sought to understand how small, medium, and large history museums communicate the value of digital experiences to adult museumgoers. Previous research has demonstrated that when museums integrate technology into their exhibits, it can produce positive outcomes in learning and engagement (Zaharias and Yiorgos, 2013). Few studies have investigated how adult museumgoers describe their experiences with technology (Falk et al., 2016). Studies involving adults' perceptions in the museum environment aim to measure these new technologies' pedagogical impact. Websites contain a large amount of data and unique expressions of contemporary culture (Pauwels, 2012). This makes them a valuable source of data for this study.

### **Purpose of the Study**

The purpose of this study was to investigate how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers. Using qualitative content analysis, specifically a Web Content Analysis (WebCA), the study collected data from websites and social media from small, medium, and large history museums in the midwestern United States. This study provided data to the investigator with minimal bias through the examination and analysis of these public websites. The data collected also provided insight into the methods and language museums use to describe digital experiences' value to adult museumgoers. Computer-mediated social networks increase feelings of connectedness, social contact, and reduced loneliness (Hill et al., 2015). Research suggests that aging adults tend to use the internet for communication and information seeking purposes (Hill et al., 2015). To gain a better understanding of the communication between

museums and adult museumgoers, this study examined museum websites to understand how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers.

### **Research Questions and Design**

Creswell (2012) stressed the importance of selecting a means of data collection that is both reliable and valid; reliability meaning that the results are stable and consistent, and validity meaning there is evidence to demonstrate data interpretation. Thus, an appropriate means of data collection and validation is essential to ensure reliable data for analysis. This study used Pauwels' Multimodal Framework for Analyzing Websites as Cultural Expressions. Pauwels' (2012) six-step framework of website signifiers provided a foundation for the multimodal analysis of website data from both a medium-specific and socio-cultural perspective. The WebCA methodology minimized ethical dilemmas since there were no participants with whom to collect data. Rather than using interviews or survey instruments on active participants, the investigator retrieved data from public websites. After reviewing the literature, the following research question was formulated for this study:

- How do small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers?

By exploring textual and graphic images related to museums' digital technology implementation, the investigator identified themes related to the use of digital tools and what value these features communicate. The results of this study could help museum leaders understand how to meet the different needs of museumgoers through the implementation of digital technology. Museum leadership can also gain valuable insight from exploring what language is used to express these benefits to building relationships and connectedness to the

museum. This study also sought to interpret what targeted and personal appeals are communicated and what benefit propositions are presented.

### **Multimodal Framework**

Researchers interested in analyzing websites' content have relied on outdated frameworks to guide data collection and analysis (Herring, 2016). Given the dynamic elements of websites, newer approaches to content analysis that recognize these differences are necessary for valid and reliable studies. This study used Pauwels' (2012) Multimodal Framework for Analyzing Websites as Cultural Expressions. This fully integrated approach addresses the multimodality of a website and the specific needs of visual analysis. Pauwels' (2012) multimodal framework guided the investigator in the collection, analysis, and interpretation of data found on history museum websites. Museum websites can reveal an array of messages through textual and visual representation. According to Pauwels (2012), websites require a method of analysis that takes into account their unique multimodal characteristics. In this study, Pauwels' (2012) six steps provided a framework for data collection, analysis, and interpretation.

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## A MULTIMODAL FRAMEWORK FOR ANALYZING WEBSITES

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### 1. Preservation of First Impressions and Reactions

- ▶ Categorization of 'look and feel' at a glance
- ▶ Recording of affective reactions

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### 2. Inventory of Salient Features and Topics

- ▶ Inventory of present website features and attributes
- ▶ Inventory of main content categories and topics
- ▶ Categorize and quantify features and topics
- ▶ Perform 'negative' analysis: significantly absent topics and features

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### 3. In-depth Analysis of Content and Formal Choices

#### 3.1 Intra-Modal Analysis (fixed/static and moving/dynamic elements)

- ▶ Verbal/written signifiers
- ▶ Typographic signifiers
- ▶ Visual representational signifiers
- ▶ Sonic signifiers
- ▶ Lay out & design signifiers

#### 3.2 Analysis of Cross-Modal Interplay

- ▶ Image/written text relations and typography-written text relations
- ▶ Sound/image-relations
- ▶ Overall design/linguistic, visual and auditory interplay

#### 3.3 Intra-Modal Analysis (fixed/static and moving/dynamic elements)

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### 4. Embedded Point(s) of View or 'Voice' and Implied Audience(s) and Purposes

- ▶ Analysis of POV's and constructed personae
- ▶ Analysis of intended/implied primary and secondary audience(s)
- ▶ Analysis of embedded goals and purposes

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### 5. Analysis of Information Organization and Spatial Priming Strategies

- ▶ Structural and navigational options and constraints (dynamic organization)
- ▶ Analysis of priming strategies and gate keeping tools
- ▶ Analysis of outer directed and/or interactive features
- ▶ Analysis of external hyperlinks

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### 6. Contextual Analysis, Provenance and Inference

- ▶ Identification of sender(s) and sources
- ▶ Technological platforms and their constraints/implications
- ▶ Attribution of cultural hybridity

Figure 2. Pauwels' (2012) Multimodal Framework for Analyzing Websites

## Data Collection

The goal of content analysis is to measure all variables as they naturally occur without manipulating independent variables (Camarero, Garrido, and Vicente, 2011). Using well-defined research questions and a clear step-by-step procedure help to avoid manipulation and over-coding at the analysis stage (Kaefer, Roper, and Sinha, 2015). For this study, the investigator collected data from small, medium, and large history museums in the midwestern United States that have implemented digital technologies targeting adults. The Midwest, as defined by the AAM, is an eight-state region that encompasses Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin ("AMM: About," 2020). To collect data for the analysis, the investigator first identified historical museums from the AMM member directory, which included 353 museums. To help ensure representation from small, medium, and large as well as urban, suburban and rural, museums, the investigator also used Google to identify museum websites using specific search terms pertaining to digital technology (interactive exhibits, gamification, augmented reality, virtual reality). The Google search results were screened using information from the websites such as size, membership, and endowment. The goal was to include at least 5 museums from each size category (small, medium, and large) and within each size category, to include a minimum of one museum from each geographic category (urban, suburban, and rural). These were further limited to only museums in the Midwest, which is an eight-state region that encompasses Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin ("AMM: About," 2020). Search results were saved as RTF files. Once opened in Microsoft Word, the investigator identified files for content not relevant for the research question, then made a screen capture and saved each file relevant to the research question as an individual JPEG.



Data were collected from 16 websites to facilitate this study. The investigator used a combination of digital tools to collect and sort the data in preparation for analysis. These tools included Windows Screen Capture and MAXQDA. Due to the dynamic nature of web content, screen captures were made and saved to the investigator's hard drive to be analyzed for first impressions, as per the first step of Pauwels' (2012) framework: *Preserving First Impressions*. The web screen captures enabled the investigator time to annotate first impressions and consider the overall design and presentation visually through the website design composition. The first step of Pauwels' (2012) framework: *Preserving First Impressions*, helps to create a data set for the analysis and is aimed at retaining the first general impression of the website and an instant assessment of the website in terms of 'look and feel' (Pauwels, 2015). These first reflections were recorded while they remained spontaneous to feed a reflexive attitude, which implies the conscious reception of a website as a 'meeting of cultures' between producers, intended audiences and the investigator (Pauwels, 2015). This was done through the notation of the investigator's subjective affective reactions: whether they are attracted to the website, intrigued by some features, or what they immediately do not seem to like about it, and overall attitudes upon first exploration of the selected sites (Pauwels, 2015).

Next, the images were prepared for import into MAXQDA to create relevant attributes of the artifacts. Finally, after the files had been saved, the investigator collected text versions of each web page listed on the website's main home page (generally accessed through the main website navigation scheme). These text versions were then imported into MAXQDA for quantitative and qualitative analysis.

## Data Analysis

The first goal in data analysis was to gain a general sense of the data, memo ideas, and consider the organization of the data (Creswell, 2012). Neuendorf (2017) advises that content analysis must be conducted according to procedures appropriate to good science. Hence, this study was guided by Pauwels' (2012) suggested sequence of qualitative WebCA. Pauwels' (2012) framework has an intentionally fluid design structure which allowed the investigator the opportunity to choose which steps applied to this study and did not require adherence to all six phases of analysis (Pauwels, 2012). Since this was a qualitative analysis, the investigator focused on steps 1-3. All data was collected using museum websites and social media. The investigator used websites whose copyright date listed on the footer of the site ranged from 2010 to 2020, relating to the research question and the purpose of the study.

When analyzing the museum website samples, the investigator looked for overlapping themes in collected data and counted how many themes the artifacts, as well as their syntactical features (Creswell, 2012). Next, the investigator used MAXQDA, a Windows PC program used for textual analysis that can be used for theory-oriented coding and retrieval and more sophisticated text analysis (Creswell, 2012). MAXQDA also enabled the investigator to import texts, codes, the coded text segments, and the text itself to measure the significance of a particular piece of coding (Creswell, 2012). Furthermore, MAXQDA can import data from a variety of formats, including JPEG and PNG, which made it an ideal tool for this study. The analysis of artifacts corresponded to the second step of Pauwels' (2012) framework: *Inventory of Salient Features and Topics*. Once the investigator generated per-unit frequencies for each text and spot checks for validation, the investigator conducted an in-depth analysis of the content and discover various design strategies and constraints before tabulating the information. This final

stage of the analysis corresponded to steps 3 of Pauwels' (2012) framework, *In-depth analysis of Content and Formal Choices*, and culminated in this final report.

### **Unit of Analysis**

The artifacts explored in this study were graphics and text from websites retrieved from publicly available museum online sources, including websites and official social media accounts. The research study examined text and graphics relating to the communication of digital technology implementation of the museums and their stated benefits to museumgoers. To ensure a broad search for units, the sample included small, medium, and large history museums from the United States. The literature offered no consensus about what is considered a small, medium, or large history museum. According to the Institute of Museum and Library Services (2020), a range of attributes an institution needs to consider when describing the size of their institution, including the number of staff members and volunteers, operating budget, size of the collection, and size of the facility. For this study's purpose, a small museum was described as a museum with less than 15 full-time employees. A large museum had more than 45 employees, and a medium museum had between 15 and 45 employees.

### **Limitations**

All qualitative research is interpretive (Creswell, 2012); therefore, the investigator must be self-reflective about their role in the study, how they interpret the findings, and their personal and political history that shapes their interpretation (Creswell, 2007). By recognizing this study's limitations, the investigator can embed suggestions for future research that will improve the weaknesses and further contribute to the literature on a topic (Creswell, 2012). A limitation of this study included the potential for a small sample size. This study was further limited in that the diversity within the samples varied by geographic location (urban, suburban, and rural), as did

the target audiences. Additionally, the investigator may have interpreted meanings and themes differently or incorrectly, making results inaccurate. However, to determine if the study's findings are accurate, the investigator used the online qualitative analysis software rather than coding data by hand. Limitation can be overcome by using software-assisted analysis over manual methods because it provides analytical flexibility and transparency (Kaefer et al., 2015).

### **Credibility and Transferability**

In qualitative research, trustworthiness is established by its credibility, transferability, and dependability (Creswell, 2012). Like surveys, a content analysis calls into question the objectivity and validity of its measures, the involvement of human decision-makers, the validity of the coding, and all the other typical disadvantages of survey research (Neuendorf, 2017). To validate procedures, check the credibility and accuracy of findings, and provide an accurate description of all data collected and analyzed, the investigator accounted for personal biases that may have influenced findings to ensure sufficient depth and relevance of data collection and analysis (Noble and Smith, 2015). Further, the investigator kept a research journal to show a decision trail to ensure that data interpretations are consistent and transparent (Noble and Smith, 2015). The journal included reflections, emergent ideas, and critical decisions on the research process. The investigator also kept track of any software or coding issues and solutions. An external document was used to mitigate the risk of losing the journal in the event of a computer crash. Keeping an external document offered the additional advantage of being able to be easily shared with research advisors. (Kaefer et al., 2015).

This study's transferability was influenced by the small number of a sample size from the museum and the non-invasive nature of the data collection. As such, the study is scalable and can be applied to other museums regardless of the organization's size. To facilitate transferability,

the investigator clearly identified the steps taking during the data analysis in a research journal with detailed notes for the study's duration beginning from the data collection phase. The research journal documented the investigator's reasoning in an effort to help show the study's development for future cross-case comparisons (Creswell, 2015). Based on the specific themes and patterns emerging from the data analysis, this study's transferability depended on the audience's ability to come to the same conclusion as the investigator's description of the data collected from other institutions (Creswell, 2015).

### **Dependability and Confirmability**

Good research should strive to have dependable testing instruments that produce stable and consistent scores when administered multiple times (Creswell, 2012). Scores are not valid if they are not dependable, and any resulting scores must be stable and consistent before they can be meaningful. Confirmability is necessary during a qualitative study to follow-up on specific cases to test out or explore further specific findings (Creswell, 2012). For this study, the investigator logged information into MAXQDA. Additionally, the investigator maintained a research journal that included detailed notes for the study's duration beginning from the data collection phase. This journal documents the investigator's reasoning throughout multiple phases of the study so that readers fully comprehend why decisions were made throughout the process.

### **Conclusion**

In addition to limitations, credibility, transferability, and dependability, this chapter begins with a description of the study's purpose, research design, and data collection procedures. Curators and educators view the incorporation of digital technology into the museum experience as a way to help enhance visitor learning, increase visitor numbers, and attract new audiences (Hughes and Moscardo, 2017). The emphasis on organizational size has led to research that

seeks to ascertain the impact of size on innovation (Camarero et al., 2011). Investigating how digital technology can provide adult museumgoers with an expanded view of cultural history and make meaning of their experience may help curators and educators identify better ways to incorporate digital technology into the museum experience.

It is necessary to exploit emerging technologies to recognize, remember, and respond to museumgoers' needs and interests (Falk et al., 2016). Since the current literature does not adequately address the adult experience of technology in museums, qualitative research is best suited to exploring the research problem, as the variables are unknown (Creswell, Hanson, Plano, and Morales, 2007). This study's results offer a unique opportunity to balance the need to conserve, preserve, and exhibit material objects while engaging and inspiring museum audiences (Hughes and Moscardo, 2017).

## CHAPTER 4

### RESULTS

History museums use computer-mediated communication (CMC) to interact with members of their organization, potential visitors, stakeholders, and the community (Thurlow, Lengel, and Tomic 2017). Visual social science methods and techniques are not limited to understanding ‘about’ the visual, but also ‘through’ visuals (Pauwels, 2015). Visual social science is grounded in the idea that valid scientific insight into society can be acquired by observing, analyzing, and theorizing its visual manifestation (Pauwels, 2015). The purpose of this study was to investigate how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers. By using a qualitative content analysis, the study collected data from websites and social media from small, medium, and large history museums in the midwestern United States. The collection of data was guided by Pauwels’ (2012) Multimodal Framework for Analyzing Websites as Cultural Expressions. The framework provided a systematic way to collect, organize, analyze, and interpret the website data. This chapter presents the analysis method used in this study as well as the findings as they relate to the research question.

#### **Analysis Method**

This study analyzed 16 history museums in the midwestern United States. These 16 museums were selected based on their geographic location and their approximate size, with the aim to have as close to equal distribution and representation as possible. Two from each state were selected. Of the total sample, there are seven medium, five small, and four large museums. Of those museums, there were six suburban, five urban, and five rural museums.

The table below provides descriptive data on the museums in this study listed in the state's alphabetical order.

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Table 1

*Museum Website Sample*

<u>Museum Name</u>	<u>City</u>	<u>State</u>	<u>Size</u>	<u>Geographical Area</u>
Chicago History Museum	Chicago	IL	Large	Urban
Wilmette Historical Museum	Wilmette	IL	Medium	Suburban
Conner Prairie Living History Museum	Fishers	IN	Large	Suburban
The Monroe County Historical Society Inc	Bloomington	IN	Small	Suburban
Linn County Historical Society	Cedar Rapids	IA	Medium	Urban
Museum of Danish America	Elk Horn	IA	Medium	Rural
Berrien County Historical Association	Berrien Springs	MI	Small	Rural
The Henry Ford	Dearborn	MI	Large	Urban
Minnesota Historical Society	St. Paul	MN	Large	Urban
Warroad Heritage Center	Warroad	MN	Small	Rural
Andrew County Museum and Historical Society	Savannah	MO	Medium	Suburban
JR's Appliance Museum	Diamond	MO	Small	Rural
Maltz Museum of Jewish Heritage	Beachwood	OH	Medium	Suburban



Century Village Museum	Burton	OH	Small	Rural
Dinosaur Discovery Museum	Kenosha	WI	Medium	Urban
Hamilton Wood Type & Printing Museum	Two Rivers	WI	Medium	Suburban

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This study used Luc Pauwels' (2012) Multimodal Framework for Analyzing Websites as Cultural Expressions. Pauwels' (2012) framework has an intentionally fluid design structure which allowed the investigator the opportunity to choose which steps applied to this study and was not required to follow all six phases of analysis (Pauwels, 2012). While this study used all six phases of Pauwels' (2012) framework as a guide for understanding the data, the investigator chose to focus on phases one through three, as they were most pertinent to the study's design and research question. Pauwels' (2012) framework led the investigator through discovery from initial first impressions, categorizing each website, and finally comparing specific content and features. A reminder of each phase in Pauwels' Framework is listed in the table below. The three phases used in this study are highlighted:

Table 2

*Pauwels' (2012) Framework*

<u>Phase</u>	<u>Description</u>	<u>Guideline</u>
One	Preservation of first impressions and reactions	Recording “first impressions” of the website
Two	Inventory of salient features and topics	Collecting and categorizing features and topics of the websites
Three	In-depth analysis of content and formal choices	Intra-modal analysis (fixed/static and moving/dynamic elements)
Four	Embedded point(s) of view or “voice” and implied audience(s) and purposes	Analysis of intended/implied primary and secondary audience(s)
Five	Analysis of dynamic information organization and spatial priming strategies	Structural and navigational options and constraints
Six	Contextual analysis, provenance, and inference	Design and infrastructure

**Phase One: Preservation of First Impressions and Reactions**

This first phase of Pauwels’ framework capturing the first impression, or the “look and feel” of the website before the investigator had formed any opinions or interpretations once the in-depth analysis had begun (Pauwels, 2012). The purpose of this first step was to

allow the initial reactions of the investigator to be recorded. The investigator recorded the visual elements, which were subjective, and included the investigator's appreciation of the overall design layout, page presentation, and general feelings toward the designer's image choice. This phase depends on the investigator's subjective responses. Thus, other researchers could get different results in this phase (Pauwels, 2012).

The process for recording first impressions consisted of a timed session of viewing each website. The investigator spent approximately 45-60 minutes visiting each site, clicking through links and studying images while making general notes on website layout, content, navigation, features, and other visual or lexical elements. The entire process of recording first impressions from all 16 websites in the sampled population took approximately 17 hours to complete and was spread over several days. The phase culminated in an in-depth process of comparing and contrasting first impressions of content and features from the websites as individual components, informed by Pauwels' (2012) framework.

### **Phase Two: Inventory of Salient Features and Topics**

Using the data source compiled from Phase One, Phase Two concentrated on collecting and categorizing "content and features" found from the website samples. It is the most in-depth part of the analysis with a goal of looking at the potential information from an intra-modal analysis then observe the cross-modal analysis, the complex forms of interplay between the different modes (Pauwels, 2012). This step involved making a note of specific website features like submission forms, newsletter sign-ups, and social media icons' inclusion and placement. These features were counted quantitatively and were grouped into categories. The investigator also engaged in what Pauwels (2012) calls a "negative analysis," wherein the investigator focused on seemingly missing elements from the sites.

During Phase Two, 48 website and social media pages were coded for content and features. As mentioned previously, “content and features” denoted the placement of visual and lexical elements on the website and web page. Step one included collecting screenshots (JPEGs) of each website and their social media home pages. The process yielded 265 potential images for analysis, totaling 151 MB of data. Of those images, the best quality JPEGs were selected and saved to the hard drive of the investigator’s computer, as well as on a backup flash drive. Then, the JPEGs were imported into MAXQDA for the coding and analysis of the data. Once the data was imported, the investigator began setting up codebooks and creating document sets to code salient content features and topics. The investigator coded the JPEG files for visual analysis in MAXQDA by highlighting and color-coding specific lexical data from the website, as well as images of technology and technology use. After visual elements were counted, the investigator performed frequency counting on general words used across all 16 websites.

### **Phase Three: In-depth Analysis of Content and Stylistic Features**

Phase three included the in-depth analysis of the frequency data and the significance of each website’s visual and textual elements. Visual social science methods examine society’s visually observable aspects as a gateway to culture’s deeper immaterial traits (Pauwels, 2015). These methods include an examination of static and dynamic elements and the interplay between imagery and the linguistic relationships found within the websites. The intra-modal analysis included a review of verbal and written signifiers, visual signifiers, and layout and design signifiers, whereas the cross-modal analysis examined the relationship between image, text, and design. Phase three began with investigating the potential information from phase two.

## Presentation of Results

The 16 websites analyzed for first impressions revealed that two distinct genres were prevalent: traditional and modern. For a website to be described as having a traditional genre, the design approach was aligned with those used in Web 1.0 design strategies. Web 1.0 is the first generation of web design (Aghaei, Nematbakhsh, and Khosravi Farsani, 2012). Websites using Web 1.0 design strategy typically have static images and are read-only, limiting user interactions or content contributions (Aghaei et al., 2012). The dominant features of Web 1.0 include hyperlinking, read-only text, and static images that only allowed browsing content. By contrast, both Web 2.0 and 3.0 technologies allow assembling and managing large global crowds with common interests in social interactions (Aghaei et al., 2012). Web 2.0 introduced better interaction and includes video streaming, embedded third-party content (Aghaei et al., 2012). The history museums reviewed generally fell into traditional or modern genres and present a style that was either controlled, creative, or blog-style, which can reflect the values the organization places on UX (Pauwels, 2015). A controlled style describes a website that has navigation at the top, as well as a logo. It also scrolls to display content in an orderly way, ending with a footer. A blog-style website presents content as blog entries. It may also have top navigation, logo, and footer, but the body of the site is presented as individual entries by date. A creative-style website breaks the conventions of Web 1.0 and displays content in a fluid and imaginative way (Aghaei et al., 2012).

An analysis of the data shows that medium-sized museums in this sample most often use a creative-style for their design, while small museums tended to use a controlled-style. A creative design style was observed more often in suburban museums, while rural museums favored a controlled-style. Large museums and urban museums in the sample tend to favor controlled-

style, as well. Medium and small museums were found to fit a more traditional website genre, while large museums were more modern in design. Whether the museum was urban or rural did seem to make a difference where the genre was concerned. Rural museums favored a traditional style, whereas urban and suburban museums leaned more modern. The table below shows how each museum was classed:

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Table 3

*Genre and Style*

<u>Museum</u>	<u>Genre</u>	<u>Style</u>
Chicago History Museum	Modern	Controlled
Wilmette Historical Museum	Traditional	Blog-style
Conner Prairie Living History Museum	Modern	Controlled
The Monroe County Historical Society Inc	Modern	Controlled
Linn County Historical Society	Traditional	Controlled
Museum of Danish America	Modern	Creative
Berrien County Historical Association	Traditional	Controlled
The Henry Ford	Modern	Creative
Minnesota Historical Society	Modern	Blog-style
Warroad Heritage Center	Traditional	Blog-style
Andrew County Museum and Historical Society	Traditional	Controlled
JR's Appliance Museum	Traditional	Controlled

Maltz Museum of Jewish Heritage	Modern	Creative
Century Village Museum	Traditional	Controlled
Dinosaur Discovery Museum	Traditional	Blog-style
Hamilton Wood Type & Printing Museum	Modern	Creative

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The first museum to be reviewed was the Minnesota Historical Society in St. Paul, MN. This museum has an extensive website with interactive content such as embedded video, embedded social media updates, virtual tours, and digital collections (See Appendix A). The website genre was classified as traditional, and the design composition was identified as blog-style. The website was designed for ease of navigation and was organized to highlight the museum's programs (See Appendix B). The website's overall feel was clean, welcoming, and inclusive, but there was also a feeling of control, order, and strategic design. Researcher notes are taken from the "First Impressions" of the website revealed:

On the first impression, this is an information-packed website. The information is presented in a blog or article fashion with social media embedded throughout the page. The overall presentation is dynamic but also a bit overwhelming. The colors are upbeat, and the text easy to read. There was a clear and recurring emphasis on the museum's digital offerings. The interior pages follow a similar design and provide access to drop-down menus to help visitors navigate easily between pages and topics (See Appendix C).

Conversely, a review of Wilmette Historical Museum in Wilmette, IL, revealed a different genre and style. Wilmette Historical Museum used an older style of website using traditional

HTML (See Appendix D). The genre was traditional, and the style was blog-style. The composition of the website has an empty and outdated feel to it. Although there are elements of control in the amount of information presented on each page, the overall impression suggested a focus more on appealing to local in-person visitors rather than reaching out to a broader audience virtually. Investigator notes on “First Impressions” stated:

Wilmette Historical Museum’s website is designed with a prominently featured header and navigation bar at the very top of the screen. There is very little use of photos. The content area is located in the middle, displaying information in a blog-style roll with additional geographic and contact information presented on the right side. There is an upcoming virtual event and reference to their online collection to the right. The website homepage seems empty, down to the footer (See Appendix E), but subsequent pages have more content. Overall, the feel of this website is quaint yet out of date. There is much empty space, and the site has an impersonal feel to it.

The Warroad Heritage Center, also in Minnesota, had a traditional design and has a blog-style. However, there were no images aside from their logo (See Appendix F). The composition of the website has an empty and outdated feel to it. However, there are elements of control in the amount of information presented on each page. The overall impression suggested a focus more on appealing to local in-person visitors rather than reaching out to a broader audience virtually. Investigator notes on “First Impressions” stated:

Warroad Heritage Center’s website is designed with a prominently featured header and navigation bar at the very top of the screen. There is very little use of photos. The content area is located in the middle, displaying information in a blog-style roll with additional geographic and contact information presented on the right side. There



is an upcoming virtual event and reference to their online collection to the right. The website homepage seems empty, but subsequent pages have more content. Overall, the feel of this website is simply that of a listing. There is, however, an easy-to-find and functional Facebook icon at the top right of the header.

A look at the Warroad Heritage Center's Facebook page suggests that they use Facebook as a way to connect with the community (See Appendix G). The most recent posts were from the past 24 hours from when the investigator first visited the site. However, they still focused on in-person experiences, with posts suggesting that people visit, a map, and hours of operation posted near the top of the page. Investigator notes on "First Impressions" stated:

Warroad Heritage Center's Facebook page seems to be how they reach their audience. They do not include video or references to online programs. They only show static images of the center and more geographic and contact information on the left navigation column. Something that sticks out right away is the red text indicating that they are closed and show their hours of operation.

Both the Warroad Heritage Center and the Museum of Danish America are rural museums. The Museum of Danish America's Facebook page is different from the Warroad Heritage Center's Facebook page in several respects. The Museum of Danish America has a button allowing visitors to access their online store directly (See Appendix H). Also, their most recent post is promoting an interactive virtual event for the community. Further, the Museum of Danish America's homepage displays a list of ways to stay in touch with the museum, including multiple links to their other social media site, all of which are active and up-to-date.

Investigator notes on "First Impressions" stated:

The Museum of Danish America’s Facebook page seems lively and accessible, especially compared to the Warroad Heritage Center’s Facebook page. It feels active and open, even though the museum was closed to the public at the time of viewing. It also has a modern and creative aesthetic that matches its website very well.

There are many similarities between the Museum of Danish America and the Maltz Museum of Jewish Heritage. For example, they are both medium-sized museums. Their websites also fall under a traditional genre using creative design style (See Appendix I). Both sites emphasize their digital offerings and virtual events and exhibits—furthermore, both utilized videos more than the previous museums. The overall impression suggested a focus on digital content and reaching a broader audience virtually (See Appendix J). Investigator notes on “First Impressions” stated:

The Maltz Museum of Jewish Heritage appears enthusiastic about its digital offerings. They have an entire web page devoted to explaining why their virtual experiences are valuable. The site is very user-friendly and appears useful to people who may not be able or inclined to visit in-person. There are many resources on the site that encourage the visitor to stay and explore. They have also made use of social media and maximized their content.

In sharp contrast to the Museum of Danish America and the Maltz Museum of Jewish Heritage, the JR’s Appliance Museum is small in rural Diamond, Missouri. It makes no mention of any digital offerings. Instead, a statement on the homepage reads, “Want a personal tour? Bringing a big group? Call Richard and schedule your visit today!!” (See Appendix K) Their website also falls under a traditional genre using a controlled design style. The overall impression of the site is that it is “homemade” and “old-fashioned.” Following the link to Facebook leads to a

Facebook page with 75 likes and low engagement. There are primarily static images and more calls to visit in-person with no mention of technology. Investigator notes on “First Impressions” stated:

The JR’s Appliance Museum website has all of the classic features of Web 1.0. This site could have been made in the 1990s, with the only exception being the inclusion of a Facebook social media icon at the footer. The site is bare and basic. It is also user-friendly, but only if the user is looking for general and location information.

The Century Village Museum in Burton, Ohio, is another small rural museum. It also makes no mention of any digital offerings (See Appendix L). Like the JR Appliance Museum, the Century Village website falls under a traditional genre using a controlled design style. The overall impression of the site is that it is “homemade.” The site mainly uses static images, including in place of live text, with the exception of one video used to promote the site as a wedding venue. Investigator notes on “First Impressions” stated:

The Century Village Museum website is Web 1.0. While the footer indicates the site was last updated in 2020, there were many missing images and broken hyperlinks. There was no mention of digital offerings or virtual technologies. It seemed inaccessible to public researchers and community members and was focused on fundraising rather than its stated mission of “Preservation, Education, and Appreciation.” It did not seem welcoming to a broad audience.

The Berrien County Historical Association in Berrien Springs, Michigan, is another example of a small rural museum. Like the JR Appliance Museum and Century Village Museum websites, the Berrien County Historical Association website falls under a traditional genre using a controlled design style. The site relies on static images, at times even in place of live text (See

Appendix M). However, the look of the site is different. Investigator notes on “First Impressions” stated:

The Berrien County Historical Association website is Web 1.0. However, its execution looks far more clean, attractive, and professional than the other small rural museums previously examined. The museum offers researchers the ability to access digital archives and collections. Considering the museum’s relative size, they seemed to recognize some value relating to their digital offerings.

The previously examined museums shared many features, including being small and rural. The following museum is a medium-sized yet urban museum. The Dinosaur Discovery Museum in Kenosha, Wisconsin, is a traditional website sharing many Web 1.0 features with the smaller rural museums (See Appendix N). However, the Dinosaur Discovery Museum is focused on its many virtual and digital offerings. They have virtual tours, exhibits, virtual school programs, curriculum resources, and programs for all ages. They also have an accessible digital archive (See Appendix O). Investigator notes on “First Impressions” stated:

The Dinosaur Discovery Museum website is Web 1.0. However, the designers have maximized their style to provide as much digital value to the public as they could. It may look out-of-date and focus on static images, but it is very functional and ready to provide a comprehensive digital experience.

Two other urban museums, the Chicago Museum of History and the Henry Ford, both having a modern website, proximately featured their digital offerings. Each site had a wide variety of virtual experiences, digital collections, and entire web pages promoting their digital advancements and tools. Both sites featured Web 2.0 content with static images, videos,

embedded apps, and interactive content. Investigator notes on “First Impressions” of the Chicago History Museum stated:

The Chicago Museum of History has a traditional look and also follows a controlled design-style (See Appendix P). The site is clean, modern, welcoming, and loaded with resources that encourage visitors to stay and interact virtually with the museum. It felt visitor-centered and practical.

Investigator notes on “First Impressions” of the Henry Ford stated:

The Henry Ford has a traditional look and follows a creative design-style. The site is interesting and fluid with dynamic elements. There is a lot to look at and many resources that encourage visitors to stay and explore the site and all its online resources (See Appendix Q). It felt visitor-centered, but some of the design elements were impractical for those digital visitors.

The Linn County Historical Society is another example of an urban museum located in Cedar Rapids, Iowa. However, it is classified as medium-sized rather than a large urban museum like the Henry Ford or the Chicago Museum of History. The website promoted its digital and virtual programs and utilized a traditional Web 1.0 structure and controlled design style (See Appendix R). Investigator notes on “First Impressions” of the Linn County Historical Society stated:

The Linn County Historical Society Chicago Museum of History has a traditional look and follows a controlled design-style. However, when attempting to scroll down the page, the images jump around, and the site does not stay uniform. There is an apparent problem with HTML coding. While the site tries to offer value to visitors, its UX is lacking (See Appendix S).

The Andrew County Museum and Historical Society is also a medium-sized museum. However, it is located in Suburban Savannah, Missouri. The website was traditional and also utilized a controlled design style (See Appendix T). Investigator notes on “First Impressions” stated:

The Andrew County Museum and Historical Society has a traditional look with a controlled design-style. The site was basic and clean but had little mention or promotion of digital offerings. They did have a Web 1.0 online exhibit page which offered a virtual experience using static images and hyperlinking. Overall, a small effort was made, but the site was more focused on the museum experience in the physical context.

The Andrew County Museum and Historical Society was the suburban museum in the sample with the least number of references or promotion of their digital offerings. The other suburban museums, the Monroe County Historical Society, Inc, the Hamilton Wood Type & Printing Museum, and the Conner Prairie Living History Museum, were small, medium, and large, respectively. Compared to the Andrew County Museum and Historical Society, the Hamilton Wood Type & Printing Museum is also a medium-sized suburban museum. However, it is a modern website with a creative design style (See Appendix U). Investigator notes on “First Impressions” stated:

The Hamilton Wood Type & Printing Museum has a bold look and dynamic. It seemed to promote a virtual museum experience naturally. They used many Web 2.0 elements, including embedded video, dynamic photo galleries, embedded social media feeds, and the site was responsive on multiple viewing devices.

In addition to promoting their digital offering on their website, the Hamilton Wood Type & Printing Museum was active on many social media platforms such as Facebook, Instagram, Flickr, Twitter, and YouTube. On all these platforms, the museum was active in sharing multimedia content and promoting ways to engage with the museum in a virtual context (See Appendix V). Similar to the Hamilton Wood Type & Printing Museum website, the Monroe County Historical Society Inc, a small suburban museum in Bloomington, Indiana, has a modern website. However, it has a controlled design style (See Appendix W). The museum is also active on social media, especially Facebook, Twitter, and Instagram. Investigator notes on “First Impressions” stated:

The Monroe County Historical Society has a basic look and feel. There were not many engaging elements to the site. It seemed to serve as more informational than experiential. Their use of social media allowed for some sort of virtual experience, but they did not use those platforms to promote or encourage the use of digital technologies. Instead, they also seemed informational and focused on two-way communication and general community engagement.

By contrast, the Conner Prairie Living History Museum is large. Similarly, it is a suburban museum in Indiana. The difference between Conner Prairie and the other suburban museums in the study is its size. It is a modern website with a controlled design style. Investigator notes on “First Impressions” stated:

The Conner Prairie Living History Museum has a conflicting visual message. Firstly, there is an emphasis on free admission to the physical location. Also, its call to action is “Join the History Makers at Conner Prairie,” referencing the museum in a physical context rather than virtual. However, the image of children engaging with

the museum experience in a virtual context through looking at their laptops implies a virtual or digital offering. Nevertheless, these offerings are not featured, promoted, or even referenced on their website. When visiting their social media, there are many videos but nothing else that could provide the visitor with a virtual museum experience.

Further, the Conner Prairie Living History Museum's Facebook page clearly states that "We bring history to life through first-person interpretation in our outdoor experience areas, as well as through interactive exhibits inside and out" (See Appendix X). Their posts encourage people to come to visit the museum and experience it in a physical context.

Visual social research ranges from the study of "found" visual materials like images and video records to "researcher-produced materials," like the recording of "First Impression" (Pauwels, 2015). These investigator notes revealed similarities and differences between small, medium, and large history museums in the midwestern United States and how each museum sampled communicated the value of digital experiences to museumgoers. After the first phase of Pauwels' (2012) framework, the second phase of the framework was used to collect a quantitative review of visual elements. To further elucidate how museums communicate the value of digital technology to adult museumgoers, frequency counts for content areas and special features were identified and recorded. After the examination and analysis of the museum websites, results showed that the sites encouraged in-person visits 31 times. Static images were commonly used on all sites, appearing 21 times, while videos were featured 14 times. Social media icons or feeds were included 10 times. Newsletter sign-up forms were used times. Live chat features were used 4 times. Multimedia was used 1 time. Frequency counts for content areas and special features can be seen in Table 4:



Table 4

*Frequency Counts for Content Areas and Special Features*


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<u>Content Area</u>	<u>Frequency</u>
In-person	31
Static Images	21
Videos	14
Social Media	10
Newsletter Form	4
Live Chat	3
Multimedia	1

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According to Pauwels (2012), frequency counts can reveal information about the design strategy used. While the counting of visual and lexical elements may not provide direct answers to the research question, it can provide a gateway to a culture's deeper immaterial traits (Pauwels, 2015). For example, when reviewing the websites, it becomes clear that even when a museum has a robust digital offering, it still encourages in-person visitor attendance. Likewise, museums that use videos and multimedia also incorporate a significant number of static images. They do not favor Web 2.0 features over 1.0 but rather use these elements to enhance their content offering.

Once counting of visual elements was completed, the investigator performed frequency counting on specific words related to the research question used across all 16 of the history museum websites. After filtering out words that were not relative to this study, the most

frequently used words spanning all 16 websites included: virtual (15), online (14), digital (11), and interactive (1). Not all signifiers were observed in the museum sample, as noted in Table 5. These negative values were included to show Pauwels' (2012) "negative analysis." The words, virtual reality, augmented reality, and game was not found on any of the 16 website samples. Table 5 below lists out the seven most frequent words found pertaining to the research question:

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Table 5

*Word Frequencies*

<u>Word</u>	<u>Number</u>
Virtual	15
Online	14
Digital	11
Interactive	1
Virtual Reality	0
Augmented Reality	0
Game	0

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Frequency counting suggested that history museums used strategies to engage with visitors and members in one-way communication. The emphasis on digital technologies that could be implemented best online, such as a virtual or online exhibit, reinforces the one-way communication conducted over the web. This contrasts with the missing words like virtual reality and augmented reality which could imply a two-way or even in-person mode of engagement. The use of the word integrative was noted once, and it was in reference to in-person

experiences available outdoors on the museum grounds. Furthermore, most museums, small museums, in particular, relied on social media sites to allow their audience to engage with them or participate in virtual events. Lastly, the lexical analysis illustrated that history museums use certain words more frequently on their websites when communicating their digital offering to the community. A lexical search of the most frequently used words resulted in over 131 incidences of words relevant to the research question. As a result of this analysis, two consistent themes emerged: *CMC as Carrier of Culture and Identity* and *Building Digital Communities*.

### **Theme 1: CMC as Carrier of Culture and Identity**

The results of the study indicate that small museums tend to focus on communicating the value of their museum experience in the physical context but embrace social media technology to communicate the socio-cultural context of the museum. Data suggested that both the visual and lexical features found on the sampled websites promoted a shared sense of culture and identity. These results were consistent regardless of the geographic classification of the museum. For example, the Maltz Museum of Jewish Heritage in Beachwood, Ohio had a message on their website, communicating an immersive experience facilitated by digital technology, which emphasized building an emotional experience with members of the Jewish community. It reads,

Visitors to the Maltz Museum of Jewish Heritage step into a world filled with inspiring and moving stories of Jewish immigrants perhaps even their own ancestors and modern-day heroes. By incorporating state-of-the-art computer interactives, film, special effects, individual stories and oral histories, the Museum's dramatic permanent exhibition is an uplifting and moving experience. (para. 1)

The Museum of Danish America's website stated,

Each year the Museum of Danish America's Genealogy Center displays a photo exhibit

in the lobby. These have now been made available online in Viewed Through the Lens: Visual Resources. Among the many interesting exhibitions are G is for Generations, In Service to County, New and Old and Immigrant Babes! All exhibits here were on view between 2004 and 2011. The photographs came from museum members and the Genealogy Center collection (para. 1).

## **Theme 2: Building Digital Communities**

The results further indicate that large museums leverage their visual communications and website features to promote and encourage potential museum visitors to engage with the museum in a virtual context in addition to the physical context. They also use social media to speak to the needs socio-cultural needs of their visitor, providing them with a visitor-centered contextual model of learning (Falk and Dierking, 2016). For example, Linn County Historical Society has a large banner spanning its website that says, “CONNECT WITH US!” which features embedded content from their social media sites like Facebook. Likewise, Mariner’s Church has a banner that says, “Connect with the past,” under which it says, “The more you connect with the museum, the more it comes alive” (para. 1) and “Our membership is a great way to explore Chicago’s storied history and connect with others” (para. 2). In both cases, the rhetorical stance suggested that visitors can engage with the organization and others in building shared stories and experiences. These results were also consistent regardless of the museum’s geographic location. Medium-sized museums also promoted their digital community; however, whether the medium-sized museum is urban, suburban, or rural was a strong indicator of how well the organization’s digital communities were cultivated, if at all. Urban and suburban medium-sized museums used more Web 2.0 technologies, while medium-sized rural museums used Web 1.0 technologies. Size did appear to make a difference in how well museums leveraged their CMC to build digital

communities. Small museums relied on social media for CMC over their organization's website but lacked the responsiveness and engagement seen in the social media of larger museums.

### **Conclusion**

This chapter outlined the methods used to collect, organize, analyze, and interpret the website data. The study's framework was Pauwels' (2012) Multimodal Framework for Analyzing Websites as Cultural Expressions. This chapter presents the analysis method used in this study as well as the findings as they relate to the research question. It presented an analysis of the history museum websites selected for the study. It included "first impressions," inventory of features and content, and analysis of the relationship between text and design. It also recorded frequency counts for content areas and special features, emergent themes, as well as words pertaining to the research question. Furthermore, this chapter analyzed how museums use CMC when reaching out to potential visitors and members. Chapter Five will include a discussion and interpretation of the findings presented in this chapter related to the study's research question.

## CHAPTER 5

### CONCLUSION

Digital technology integration is paramount to the success of a museum, yet not all museums recognize or communicate the value of digital technology equally (Falk et al., 2016). Research suggests that aging adults tend to use the internet for communication and information seeking purposes (Hill, Betts, and Gardner, 2015). Education is a crucial consideration that adult museumgoers have when deciding whether to visit a museum in-person or remotely (Griffiths, 2008). However, adults who engage with museums do so almost as equally in-person (87%) as remotely via the internet (86%) (Griffiths, 2008). While computer-mediated social networks increased feelings of connectedness and social contact and reduced loneliness, these benefits alone are not sufficient for the adult learner (Hill et al., 2015). For digital technology to be enriching to the adult learner, it should be coupled with face-to-face social contact (Hill et al., 2015). To exploit emerging technologies, museums must recognize, remember, and respond to museumgoers' needs and interests (Falk et al., 2016).

These museums meet the different needs of museumgoers through the implementation of digital technology and explore what language is used to express these benefits to build relationship and connectedness to the museum. This qualitative web content analysis examined how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers. The investigator gathered data from 16 history museum websites and analyzed them using MAXQDA. The findings describe what targeted and personal appeals are communicated and what benefit propositions are presented. The collection of data, its organization, analysis, and interpretation were guided by Pauwels' (2012) Multimodal Framework for Analyzing Websites as Cultural Expressions.

Chapter 5 discusses the findings and themes that emerged from the study, as well as a review of the research question. This chapter also demonstrates the alignment of the conceptual framework with the findings of the study. Additionally, Chapter 5 identifies this study's findings in relation to the literature. Finally, this chapter discusses recommendations for action, followed by opportunities for further study.

### **Interpretation of Findings**

Through the exploration of research question, themes emerged that provided insight into how history museums meet the different needs museumgoers through the implementation of digital technology. The study explored what language is used to express these benefits to build relationship and connectedness to the museum and identified what targeted and personal appeals are communicated through computer-mediated communication (CMC). The themes demonstrated how museum communication align with the contextual model of learning (Falk and Dierking, 2013), as visitors to the websites experience the museum, albeit virtually, in three contexts (personal, physical, and socio-cultural). Moreover, this study's findings underscored alignment with the conceptual framework expounded on the central research question. The findings contributed to recommendations for action and further study.

### **Central Research Question**

The central research question for this study was: *How do small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers?* Through the exploration of the central research question in Phase 1 of Pauwels' (2012) framework "First Impressions," visual and lexical cues were observed that suggested two consistent themes. These themes included *CMC as Carrier of Culture* and *Identity, Building Digital Communities*.

**Theme 1: CMC as Carrier of Culture and Identity.** The central research question asked how the history museums used mediated communication on their website to communicate the value of the digital experience. According to Pauwels (2012) Multimodal Framework for Analyzing Websites as Cultural Expressions, websites function as “carriers of culture” (p. 253). Culturally specific meanings can be found in the explicit and implicit content of an organization’s website that can be culturally significant (Pauwels, 2012). This content can reveal information about the organization, such as mission, beliefs, and values. The results of this study suggest that visitors of history museums are the recipients of embedded messages either explicit or implicit. Both the visual and lexical features found on websites serve to foster a shared sense of culture and identity. Organizational culture occurs when people share values or possess the willingness and ability to embrace those values (Coleman, 2013). The key differences between museum texts encouraging culture and identity were subtle. Some messages were short and informational, while others were long, well-defined, and emotional. All, however, emphasized creating an atmosphere either in the personal or digital context that encouraged museumgoers to share in the process of developing a culture and promoting visitor identification. Discovering to what extent history museums use CMC as carrier of culture and identity would help determine whether there is a history museum model of identification.

**Theme 2: Building Digital Communities.** The second theme that emerged from visual analysis was *building digital communities*. This study elucidated how smaller museums often promote the physical museum experience over the digital, but they frequently rely on social media technology to communicate the socio-cultural context of the museum, regardless of the geographic location of the museum. Social media could allow museumgoers to satisfy their emotional needs in the socio-cultural context. This study also elucidated how small museums use



CMC to create digital museum experiences through their websites and especially social media to create social networks. The frequency data from the quantitative analysis demonstrated that history museums seemed to be using design elements specifically to communicate organizationally to their digital community members. These design elements included content-driven forms, polls, and comment features to engage with visitors. This social engagement can be used for informative purposes, but also to promote a sense of community among members, cultivating increased feelings of connectedness and social contact and reduced loneliness (Hill et al., 2015). This theme was repeatedly identified through various calls to action that invited visitors to join the “community” or to become “part of” the organization or individual exhibit through digital means. Organizational culture relies on shared experiences to build digital communities (Henderson et al., 2015), Thus these calls to action encourage visitors to participate in such experiences, fostering a sense of community in the digital museum space.

### **Connection to Theory**

To better understand how museums communicate the value of digital technology to adult learners, this study used the contextual model of learning (Falk and Dierking, 2013), a visitor-centered perspective in which all experiences and learning are contextual. There are three contexts in the Falk and Dierking (2013) model: personal, physical, and socio-cultural. The physical context, or the physical space that the adult learners navigate, is comprised of all that the learner encounters in the museum (Geismar, 2018). During a virtual visit, the CMC a museum uses, such as their website and social media, to play an important role in museum education and outreach and are not merely digital objects within the context of the physical space (Geismar, 2018). Small museums tend to communicate the value of their museum experience in

the physical context. This could be attributed to smaller museums having smaller technology budgets than larger museums.

The target demographics of small museums are often older adults (65+), and research shows that seniors favor human interaction and engagement in the physical context over the use of digital technology (Traboulsi et al., 2018). Each person visits a museum to satisfy their own identity-related needs (Falk, 2020). Both seniors and young adults report digital technology can elicit emotional responses (Alelis, Bobrowicz, and Ang, 2015). This study illustrates how smaller museums often promote the physical museum experience over the digital, but they frequently rely on social media technology to communicate the socio-cultural context of the museum, regardless of the geographic location of the museum. Social media could allow museumgoers to satisfy their emotional needs in the socio-cultural context (Alelis et al., 2015). This study also elucidated how small museums use CMC to create digital museum experiences through social media, addressing socio-cultural needs of adult museumgoers. A digital museum experience should be more than just a media experience, but effective execution of digital technology is not yet fully actualized in the museum experience, particularly in small-medium-sized museums (Caspani et al., 2017). History museums do not recognize or communicate the value of digital technology equally. This study showed that medium-sized museums tend to promote their digital offerings more often than small museums, but their geographic location played a role in how well they communicated this value. Urban and suburban medium-sized museums used more Web 2.0 technologies, while medium-sized rural museums primarily used Web 1.0 technologies.

### **Connection to Literature**

This study shows that more research is needed to determine the pedagogical value of technology on critical variables within the museum context (Everett and Barrett, 2011).

Museums with smaller budgets or other financial constraints may be exercising caution when allocating resources for digital technologies. The literature review showed a lack of consensus among museum professionals about the impact of digital technologies in museums. One consistent theme, however, was the slow rate of adoption of new technologies because of their relative newness (Cerquetti and Ferrara, 2018). Skepticism about the value of digital technology is still present among museum professionals, creating a persistent gap between theory and practice (Cerquetti and Ferrara, 2018).

This study found that large museums often use an integrated approach to their CMC to communicate their values, which was consistent with the literature (Falk et al., 2016). The existing literature shows that museum leaders have a wide range of choices, thanks to the opportunities provided by new technologies (Cerquetti and Ferrara, 2018). Large museums, regardless of their geographic location, emphasized their digital offerings more often than small museums. Larger history museums can afford to be more market-oriented, as leaders realized that effective marketing could help museums shift negative perceptions, including the perception that museums are boring storehouses of objects (Mudzanani, 2017). Hence, museum leaders use digital technology to get closer to visitors and offer intelligent, fun, interactive education and overall immersive experiences (Cerquetti and Ferrara, 2018).

### **Relevance of Study to Identified Gaps**

The literature suggests that accessibility, engagement, and learning retention are critical variables to highlight when communicating the value of digital technology (Falk et al., 2016). Access, in this context, describes broader issues associated with the idea of barriers, such as intellectual, cultural, attitudinal/social, and financial (Lang, 2017). Falk et al. (2016) stressed the importance of digital technologies in museums, including increased accessibility, pointing out

that they are just tools to be selectively used by the public. How the public will use these tools depends on several factors, including socioeconomic variables, demographics, and motivation (Falk et al., 2016). An emergent theme of this study, *CMC as Carrier of Culture and Identity*, suggests that small museums tend to focus on communicating the value of their museum experience in the physical context but embrace social media technology to communicate the socio-cultural context. This aligns with gaps in the literature, as discussed by Falk (2020). According to Falk (2020) motivations are closely linked to identity and each museum visitor interacts with the museum to satisfy their own identity-related needs. Museumgoers are not always conscious of their identity-related needs, but they can express them in their actions (Falk, 2020). Thus, the CMC of a museum can act as a carrier of culture and identity.

Furthermore, contemporary museums face serious challenges stemming from reduced funding, societal change, and new digital technologies (Falk, Dierking, and Semmel 2016). Smaller museums depend on volunteers, making it more likely that their ongoing CMC is conducted by volunteers who may not have knowledge of web design or coding (Falk and Dierking, 2018). This study sought to address the gap in existing literature identified by Cerquetti and Ferrara (2018) and Marty (2017). These researchers point out that both visitors and leaders still have skepticism about the value of digital technology, and the literature is primarily focused on information storage and retrieval practices, issues of electronic classification and nomenclature, and database design and development, rather than how museums use CMC to communicate the value of their digital technology (Cerquetti and Ferrara, 2018); Marty, 2017). This study's second emergent theme, *Building Digital Communities*, indicated that large history museums leverage both their websites and their social media to create digital communities. Larger history museums in this study promote and encourage potential museum visitors to

engage with the museum in a virtual context in addition to the physical context. They also use social media to speak to the needs socio-cultural needs of their visitor, providing them with a visitor-centered contextual model of learning (Falk and Dierking, 2016). Medium-sized museums also tend to promote their digital offerings; however, whether the medium-sized museum is urban, suburban, or rural was a strong indicator of how well the organization's digital offerings were communicated, if at all. Size did appear to make a difference in how well museums leveraged their CMC to build digital communities. Small museums relied on social media for CMC over their organization's website but lacked the responsiveness and engagement seen in the social media of larger museums.

### **Limitations of the Study**

As discussed in the Methodology, a limitation of this research is that all the data were collected from only 16 museums from a single country (U.S.) and a single region (Midwest) within that country. Also, minority populations are under-represented in museum attendance. African American and Hispanic populations visit museums at a rate of 20% to 30% lower than the national average (National Endowment for the Arts, 2014). Therefore, the results do not present a full and complete understanding of the research topic. Finally, this study was qualitative and, therefore, interpretive (Manen, 2016).

### **Recommendations for Action**

The emergent themes found in the study, *CMC as Carrier of Culture and Identity* and *Building Digital Communities*, informed the recommendations for actions. The following recommendations are guided by the conceptual framework and seek to solve the problem of practice identified in this study. The recommendations include:

- Provide online opportunities that go beyond information exchange and target the identity-related needs of adult learners.
- Prioritize social exchange in online platforms with a focus cultivating and strengthen relationships between museumgoers as well as connectedness to the museum.

Helping history museums understand that their CMC is for more than information exchange and can be a carrier of culture and identity is important but may be challenging. While Wheatley (1999) points out, leaders must be willing to step out into the unknown and be pioneers, and Bass & Bass (2009) warn that “pioneers are seldom outstanding leaders” (p. 297) because their ideas may be too advanced for their organization. For museum leaders to make the best decisions in a constantly changing technological and demographic landscape, they must have a clear understanding of what guides them and how that vision should positively influence the actions and policies of their institution. A leader can act as a radical change agent to transform an organization from a bureaucracy into an adaptive organization that embraces new and different (Bass & Bass, 2008). Museum leaders should be authentic in their approach to a CMC change strategy if they want to close the gap between theory and practice (Cerquetti and Ferrara, 2018). Through more effective CMC, museum leaders communicate value to their stakeholders (Falk, 2020). By clearly communicating the relationship between the museum as a physical space and as the digital landscape, museum leaders can reinforce the value of their digital offerings (Eghbal-Azar et al., 2016).

For museum leaders to successfully meet the identity needs of adult museumgoers and be carriers of culture and cultivate and strong digital community, the investigator recommends that museum leaders act authentically to transform their museum’s CMC. Authentic leadership is

important for authentic change. According to Fullan (2007), authentic leaders use ideas, values, and commitments to lay a foundation for their leadership practice. The qualities of authentic leaders are based on both style and substance (Fullan, 2007). According to Fullan (2007), the change process is less about innovation and more about innovativeness and less about strategy and more about strategizing; implementing change can be complicated. It is important for leaders to not only have good ideas but also present them well (Fullan, 2007). They also need to seek, listen to, build good relationships with doubters and those in the organization who may not trust them (Fullan, 2007). Therefore, it is necessary to have a clear technology and CMC plan that can be communicated, understood, and followed by everyone in the organization.

Skepticism about the value of digital technology is still present among museum professionals, creating a persistent gap between theory and practice (Cerquetti and Ferrara, 2018). To close this gap, transformative leaders would benefit from using Kotter's (2012) eight-step plan for transforming an organization. The first steps are to develop a sense of urgency in followers, then build a strong base of supporters (Kotter, 2012). Next, it is necessary to create a vision that helps direct the change effort in a way people can easily understand and follow (Kotter, 2012). Then, leadership must relentlessly and convincingly communicate this vision (Kotter, 2012). Moreover, they must remove barriers and continuously check for such barriers or people who are resisting change (Kotter, 2012). They must also plan for and create short-term wins by planning for visible improvements, creating them, and rewarding employees for their involvement (Kotter, 2012). Further, they must consolidate gains and achievements by analyzing the successes and reinvigorating the process with the necessary changes (Kotter, 2012). The final step in Kotter's (2012) plan for transforming an organization is institutionalizing these new approaches by connecting new behaviors to organizational success.

Changes proposed by transformational leaders can undermine or demand an overhaul of the organizational rules and regulations (Marion and Gonzales, 2014). Transformational leadership combined with a democratic method of leadership will help followers feel safe in taking initiatives and suggesting new solutions to organizational challenges (Marion & Gonzales, 2014). This mixed approach of focusing on people and productivity will unify members of the organization around a shared culture so that they can reach a common goal. Bass (2009) identifies leaders as the culture builder. The importance of building an organizational culture cannot be overstated. As Marion and Gonzales (2014) assert, culture brings people together to accomplish tasks. Thus, by unifying members of an organization around a shared culture, they are more empowered to reach a common goal. Surveys to measure changes in the organization-wide understanding of goals, expectations, and processes will also serve to demonstrate measurable evidentiary support of the leader's proposed CMC improvement plan. Evidence that will be results-oriented and should demonstrate the efficacy of this change initiative.

### **Recommendations for Further Study**

Not all dimensions of Pauwels' (2012) framework will yield important data for every possible research question. Further studies will need a more refined approach to certain signifiers. Therefore, each study will benefit from the development of a more customized model for selecting and codifying the most significant parameters for their specific research question (Pauwels, 2015). Since this study sought to explore the role of CMC in midwestern history museums, a study that included visitor perception of history websites could illuminate possible factors that influence engagement. In this context, a study that queried visitors directly through a survey or in-person interviews could help researchers understand how effectively history museums use CMC to communicate their digital offerings and provide a digital museum



experience to their stakeholders. It could also gauge the actual efficacy of the message as it is perceived by members. A study of this type could help museum leaders, directors, curators, and others directly involved with communication strategies learn how to communicate better and more effectively to promote digital learning. Further quantitative and qualitative studies that present these subject areas would add to the literature on mediated communication and organizational communication.

### **Conclusion**

This qualitative web content analysis sought to investigate how small, medium, and large history museums in the midwestern United States communicate the value of digital experiences to adult museumgoers. The results of this study could help museum leaders understand how to meet the different needs of museumgoers through the implementation of digital technology. Museumgoers have come to expect increased access to museum information and resources (Marty, 2008), and research has shown that museum websites can increase the desire to visit the museum physically (Kabassi, 2017). As this study showed, small museums and those with financial constraints are visitor-centered, while large museums often communicate the value of their digital offerings. Regardless of the size or location of a museum, funding is limited, and all museums must compete not with other museums for funds but also other nonprofits (Kotler, 2003). Thus, a museum of any size should have a well-designed website to attract more visitors. For museum leaders to bridge the gap between theory and practice, they will have to cultivate an organizational culture of trust, as skepticism about the value of digital technology is still present among museum professionals. Kotter's (2012) eight-step plan for transforming an organization can help guide museum leaders in facilitating meaningful change in their organizations.

## References

- About. (n.d.). Retrieved December 30, 2020, from <https://www.midwestmuseums.org/about/>
- Aghaei, S., Nematbakhsh, M. A., & Khosravi Farsani, H. (2012). Evolution of the World Wide Web: From Web 1.0 to Web 4.0. *International Journal of Web & Amp; Semantic Technology*, 3(1), 1-10. doi:10.5121/ijwest.2012.3101
- Alelis, G., Bobrowicz, A., and Ang, C. S. (2015). Comparison of engagement and emotional responses of older and younger adults interacting with 3D cultural heritage artefacts on personal devices. *Behaviour & Information Technology*, 34(11), 1064-1078. doi:10.1080/0144929x.2015.1056548
- Antioco, M., & Coussement, K. (2018). Misreading of consumer dissatisfaction in online product reviews: Writing style as a cause for bias. *International Journal of Information Management*, 38(1), 301-310. doi:10.1016/j.ijinfomgt.2017.10.009
- Bass, B. M. (2009). *The Bass Handbook of Leadership: Theory, Research, and Managerial Applications*. Simon & Schuster.
- Bauer, C. and Scharl, A. (2000) Quantitative evaluation of web site content and structure, *Internet Research*, 10(1), 31–43.
- Bitgood, S., Patterson, D., and Benefield, A. (1988). Exhibit design and visitor behavior. *Environment and Behavior*, 20(4), 474-491. doi:10.1177/0013916588204006
- Black, G. (2012). *Transforming museums in the twenty-first century*. London: Routledge.
- Brown, B. R., and Low, T. L. (1943). The Museum as a Social Instrument. *College Art Journal*, 2(4), 131. doi:10.2307/773349
- Callahan, J. L. (2014). Writing literature reviews. *Human Resource Development Review*, 13(3), 271-275. doi:10.1177/1534484314536705

- Camarero, C., Garrido, M. J., & Vicente, E. (2011). How cultural organizations' size and funding influence innovation and performance: The case of museums. *Journal of Cultural Economics*, 35(4), 247-266. doi:10.1007/s10824-011-9144-4
- Caspani, S., Brumana, R., Oreni, D., and Previtali, M. (2017). Virtual Museums As Digital Storytellers For Dissemination of Built Environment: Possible Narratives And Outlooks For Appealing And Rich Encounters With The Past. *ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, XLII-2/W5, 113-119. doi:10.5194/isprs-archives-xlii-2-w5-113-2017
- Cerquetti, M., & Ferrara, C. (2018). Marketing research for cultural heritage conservation and sustainability: Lessons from the field. *Sustainability*, 10(3), 774. doi:10.3390/su10030774
- Chang, E. (2006). Interactive experiences and contextual learning in museums. *Studies in Art Education*, 47(2), 170-186. Retrieved from <http://www.jstor.org/stable/3497107>
- Christensen, J. R. (2011). Four steps in the history of museum technologies and visitor's digital participation. *MedieKultur: Journal of Media and Communication Research*, 27(50), 23. doi:10.7146/mediekultur.v27i50.2982
- Clark, R. E., Yates, K., Early, S., & Mouton, K. (2010). An analysis of the failure of electronic media and discovery-based learning. In K. H. Silber & W. R. Foshay (Eds.), *Handbook of improving performance in the workplace* (pp. 263-297). San Francisco: Pfeiffer
- Collins, A. and Halverson, R. (2009). *Rethinking education in the age of technology: The digital revolution and the schools*. New York: Teachers College Press.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. New York, NY: Pearson.

- Creswell, J. W., Hanson, W. E., Plano, V. L., and Morales, A. (2007). Qualitative Research Designs. *The Counseling Psychologist*, 35(2), 236-264. doi:10.1177/0011000006287390
- Creswell, J. W., and Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130. doi:10.1207/s15430421tip3903\_2
- Cruz-Garza, J. G., Brantley, J. A., Nakagome, S., Kontson, K., Megjhani, M., Robleto, D., and Contreras-Vidal, J. L. (2017). Deployment of Mobile EEG Technology in an Art Museum Setting: Evaluation of Signal Quality and Usability. *Frontiers in Human Neuroscience*. Retrieved from <http://link.galegroup.com.une.idm.oclc.org/apps/doc/A514112230/>
- Csikszentmihalyi, M., and Hermanson, K. (1995). Intrinsic motivation in museums: Why does one want to learn? In J. H. Falk and L. D. Dierking (Eds.), *Public institutions for personal learning: Establishing a research agenda* (pp. 67-77). Washington, DC: American Association of Museums
- Das, S. (2015). Using museum exhibits: An innovation in experiential learning. *College Teaching*, 63(2), 72-82. doi:10.1080/87567555.2015.1005044
- Deci, E. L., & Ryan, R. M. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. doi:10.1037/0003-066x.55.1.68
- Deeth, J. (2015). Engaging strangeness in the art museum: An audience development strategy. *Museum and Society*, 10(1), 1-14. Retrieved from <https://journals.le.ac.uk/ojs1/index.php/mas/article/view/191/205>
- Domínguez, A., Saenz-De-Navarrete, J., De-Marcos, L., Fernández-Sanz, L., Pagés, C., and Martínez-Herráiz, J.-J. (2013). Gamifying learning experiences: Practical implications

- and outcomes. *Computers and Education*, 63, 380–392. doi:  
10.1016/j.compedu.2012.12.020
- Eghbal-Azar, K., Merkt, M., Bahnmüller, J., and Schwan, S. (2016). Use of digital guides in museum galleries: Determinants of information selection. *Computers in Human Behavior*, 57, 133–142. doi:10.1016/j.chb.2015.12.035
- Everett, M. C., and Barrett, M. S. (2011). Benefits Visitors Derive from Sustained Engagement with a Single Museum. *Curator: The Museum Journal*, 54(4), 431–446. doi:  
10.1111/j.2151-6952.2011.00108.x
- Falk, J. (2016). Museum audiences: A visitor-centered perspective. *Loisir Et Société / Society and Leisure*, 39(3), 357–370. doi: 10.1080/07053436.2016.1243830
- Falk, J. H., and Dierking, L. D. (2013). *The museum experience*. Walnut Creek, CA: Left Coast Press.
- Falk, J. H., Dierking, L. D., and Semmel, M. (2016). *The museum experience revisited*. London: Routledge.
- Falk, J. H., & Dierking, L. D. (2018). *Learning from museums*. Lanham: Rowman & Littlefield.
- Falk, J. H. (2020, March 12). *The Museum Experience Revisited*. Lecture presented at Oregon State University 21st Century Museum Issues Lecture Series in Oregon, Corvallis.  
Retrieved March 12, 2020, from <https://www.youtube.com/watch?v=XDP87JEC3D4>
- Freire, P. (2004). *Pedagogy of hope: Reliving pedagogy of the oppressed*. (R. R. Barr, Trans. A. M. A. Freire, Notes). New York, NY: Continuum.
- Fullan, M. (2015). *Leading in a culture of change*. San Francisco: Jossey-Bass.
- Geismar, H. (2018). *Museum object lessons for the digital age*. London: UCL Press. Retrieved from <http://www.jstor.org/stable/j.ctv1xz0wz>

- Gilmore, A. and Rentschler, R. (2002), "Changes in museum management: A custodial or marketing emphasis?", *Journal of Management Development*, 21(10), 745-760. <https://doi.org/10.1108/02621710210448020>
- Göçer, A. (2016). An important stage of life-long learning: Adult literacy and benefits (Sampling of Kayseri in Turkey). *Online Submission*, 41199-215.
- Gold, M. K., and Klein, L. F. (2016). *Debates in the digital humanities 2016*. Minneapolis, MN: University of Minnesota Press.
- Griffiths, J. (2008). *InterConnections: The IMLS national study on the use of libraries, museums and the Internet: Internet reports*. Institute of Museum and Library Services.
- Guney, Z. (2019). Considerations for human–computer interaction: user interface design variables and visual learning in IDT. *Cypriot Journal of Educational Sciences*, 14(4), 731–741. doi: 10.18844/cjes.v11i4.4481
- Halverson, C. (2009). *Rethinking education in the age of technology*. New York, NY: Teachers College Press.
- Harrell, M. H., and Kotecki, E. (2015). The flipped museum: Leveraging technology to deepen learning. *Journal of Museum Education*, 40(2), 119-130.  
doi:10.1179/1059865015z.00000000088
- Herring, S. C. (2010). Web content analysis: Expanding the paradigm. *International Handbook of Internet Research*, 233-249. doi:10.1007/978-1-4020-9789-8\_14
- Herring, S. C. (2014). ASIS&T annual meeting award winners: Research: Computer-mediated communication. *Bulletin of the Association for Information Science and Technology*, 40(3), 41-44. doi:10.1002/bult.2014.1720400313
- Hill, R., Betts, L. R., and Gardner, S. E. (2015). Older adults' experiences and perceptions of

- digital technology: (Dis)empowerment, wellbeing, and inclusion. *Computers in Human Behavior*, 48, 415-423. doi:10.1016/j.chb.2015.01.062
- Hockly, N. (2019). Augmented reality. *ELT Journal*, 73(3), 328–334. doi: 10.1093/elt/ccz020
- Hughes, K., and Moscardo, G. (2017). Connecting with new audiences: Exploring the impact of mobile communication devices on the experiences of young adults in museums. *Visitor Studies*, 20(1), 33-55. doi:10.1080/10645578.2017.1297128
- Hume, M., & Mills, M. (2011). Building the sustainable iMuseum: Is the virtual museum leaving our museums virtually empty? *International Journal of Nonprofit and Voluntary Sector Marketing*, 16(3), 275-289. doi:10.1002/nvsm.425
- Hyland-Russell, T., and Syrnyk, C. (2015). Challenging change: Transformative education for economically disadvantaged adult learners. *International Journal of Lifelong Education*, 34(5), 514-529. doi:10.1080/02601370.2015.1030349
- Institute of Museum and Library Services. (n.d.). Retrieved 2020, from <https://www.imls.gov/>
- Jenkins, H., Thorburn, D., & Seawell, B. (2003). *Democracy and new media*. Cambridge, MA: MIT Press.
- Jewitt, C. (2012). Digital technologies in museums: New routes to engagement and participation. *Designs for Learning*, 5(1-2), 74. doi:10.2478/dfl-2014-0005
- Kabassi, K. (2017). Evaluation of Personalised Software in Cultural Heritage. *International Journal of Computational Methods in Heritage Science*, 1(1), 41-57.  
doi:10.4018/ijcmhs.2017010103
- Kaefer, F., Roper, J., & Sinha, P. (2015). A software-assisted qualitative content analysis of news articles: Example and reflections. *Forum: Qualitative Social Research*, 16(2), 8th ser. doi:doi:http://dx.doi.org/10.17169/fqs-16.2.2123

- Kim, I., & Kuljis, J. (2010). Applying content analysis to web-based content. *Journal of Computing and Information Technology*, 18(4), 369-375.
- Knowles, M. S. (1990). *Andragogy in action*. San Francisco: Jossey-Bass.
- Knowles, M. S. (1959). *Informal adult education: A guide for administrators, leaders, and teachers*. New York: Association Press.
- Kofi Osei-Frimpong, Nana Owusu-Frimpong. (2017). Value co-creation in health care: A phenomenological examination of the doctor-patient encounter. *Journal of Nonprofit and Public Sector Marketing*, 29(4), 365-384.
- Kohsaka, R., Fujihira, Y., Uchiyama, Y., Kajima, S., Nomura, S., and Ebinger, F. (2017). Public perception and expectations of biomimetics technology: Empirical survey of museum visitors in Japan. *Curator: The Museum Journal*, 60(4), 427-444.  
doi:10.1111/cura.12246
- Kotler, N. (2003). *Creativity and interactivity new ways to experience, market and manage museums*. Melbourne: Deakin university press.
- Kotter, J. (2012). *Leading change*. Boston: Harvard Business School Press.
- Krause, N. (2019, August 09). ArtLens Wall. Retrieved from <http://www.clevelandart.org/artlens-gallery/artlens-wall>
- Kyvig, D. E., & Marty, M. A. (2010). *Nearby history: Exploring the past around you (American Association for State and Local History book series)*. Rowman & Littlefield.
- Lang, C. (2017). *The responsive museum: Working with audiences in the Twenty-First Century*. London: New York: Routledge.
- Leftheriotis, I., Giannakos, M. N., and Jaccheri, L. (2017). Gamifying informal learning activities using interactive displays: An empirical investigation of students' learning and



- engagement. *Smart Learning Environments*, 4(1), 1-19.  
doi:<http://dx.doi.org.une.idm.oclc.org/10.1186/s40561-017-0041-y>
- Li, R., & Liew, A. (2015). The Challenges of Digital Museum. *Encyclopedia of Information Science and Technology, Third Edition*, 4929-4937. doi:10.4018/978-1-4666-5888-2.ch486
- Lincoln, Y. S., and Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park: Sage Publ.
- Loon, A. V., Ros, A., and Martens, R. (2012). Motivated learning with digital learning tasks: What about autonomy and structure? *Educational Technology Research and Development*, 60(6), 1015-1032. doi:10.1007/s11423-012-9267-0
- Lurie, N. H., & Mason, C. H. (2007). Visual representation: Implications for decision making. *Journal of Marketing*, 71(1), 160-177. doi:10.1509/jmkg.71.1.160
- Mamrayeva, D. G., and Aikambetova, A. E. (2014). Information technology in museums. *Education and Science without Borders*, 5(10), 33-35. Retrieved from <https://une.idm.oclc.org/login?url=https://search-proquest-com.une.idm.oclc.org/docview/1683975380?accountid=12756>
- Manen, M. V. (2016). *Phenomenology of practice: Meaning-giving methods in phenomenological research and writing*. Abingdon: Routledge.
- Marion, R., & Gonzales, L. D. (2014). *Leadership in education: Organizational theory for the practitioner*. Long Grove, Ill: Waveland Press.
- Marty, P.F. Interactive Technologies. In *Museum Informatics. People, Information, and Technology in Museums*; Marty, P.F., Burton Jones, K., Eds.; Routledge: London, UK; New York, NY, USA, 2008; pp. 131–135.
- Mayer, R. E. (2011). Towards a science of motivated learning in technology-supported

- environments. *Educational Technology Research and Development*, 59, 301-308
- McCray, K. H. (2016). Gallery Educators as Adult Learners: The Active Application of Adult Learning Theory. *Journal of Museum Education*, 41(1), 10-21.  
doi:10.1080/10598650.2015.1126058
- Meftah, C., Retbi, A., Bennani, S., and Idrissi, M. K. (2019). Mobile serious game design using user experience: Modeling of software product line variability. *International Journal of Emerging Technologies in Learning (IJET)*, 14(23), 55. doi: 10.3991/ijet.v14i23.10899
- Museums in the Midwest. (n.d.). Retrieved December 30, 2020, from  
<https://www.midwestmuseums.org/resources/directories/>
- Monberg, J. (2005). Trajectories of computer-mediated communication research. *Southern Communication Journal*, 70(3), 181-186. doi:10.1080/10417940509373325
- Mudzanani, T. (2017). The four 'C's of museum marketing: Proposing marketing mix guidelines for museums. *African Journal of Hospitality, Tourism and Leisure*, 6(2), 1-12. Retrieved from [http://: www.ajhtl.com](http://www.ajhtl.com)
- Mura, M. (2009). Re: focus design display design in museums: Towards an integrative approach. *The Potential of Science and Technology Museums. Journal of Design History*, 22(3), 259-270. Retrieved from <http://www.jstor.org/stable/40301450>
- National Endowment for the Arts. (2014). How a Nation Engages with Art: Highlights from the 2012 Survey of Public Participation in the Arts *Research Report* (Vol. 57). Washington, DC: National Endowment for the Arts.
- Neill, A. C. (2010). Providing a tailored educational interaction with cultural treasures: a study of museum docents. *Journal of Adult and Continuing Education*, 16(2), 67-82.  
doi:10.1177/147797141001600206

- Neuendorf, K. A. (2017). *The content analysis guidebook*. Los Angeles: SAGE.
- Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence Based Nursing, 18*(2), 34-35. doi:10.1136/eb-2015-102054
- Norman, D., Miller, J., and Henderson, A. (1995). What you see, some of what's in the future, and how we go about doing it. *Conference Companion on Human Factors in Computing Systems - CHI 95*. doi:10.1145/223355.223477
- Pallud, J., and Monod, E. (2017). User experience of museum technologies: The phenomenological scales. *European Journal of Information Systems, 19*(5), 562-580. doi:http://dx.doi.org.une.idm.oclc.org/10.1057/ejis.2010.37
- Parry, R. (2010). *Museums in a digital age*. London: Routledge.
- Patton, M. Q. (2015). *Qualitative research and evaluation methods: Integrating theory and practice*. Thousand Oaks, CA: SAGE Publications.
- Pauwels, L. (2012). A multimodal framework for analyzing websites as cultural expressions. *Journal of Computer-Mediated Communication, 17*, 247-265. doi:10.1111/j.1083-6101.2012.01572.x
- Pauwels, L. (2015). *Reframing visual social science: Towards a more visual sociology and anthropology*. Cambridge: Cambridge University Press.
- Pierroux, P., Krange, I., and Sem, I. (2011). Bridging contexts and interpretations: Mobile blogging on art museum field trips. *MedieKultur: Journal of Media and Communication Research, 27*(50), 18. doi:10.7146/mediekultur.v27i50.2997
- Ravitch, S. M., and Riggan, M. (2017). *Reason and rigor: How conceptual frameworks guide research*. Los Angeles: SAGE.
- Reisman, M. (2008). Using design-based research in informal environments. *Journal of Museum*

*Education*, 33(2), 175-185. doi:10.1080/10598650.2008.11510598

Roberts, L. C. (1997). *From knowledge to narrative: Educators and the changing museum*.

Washington, DC: Smithsonian Institution Press.

Ryan, R. M., and Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. doi:10.1037//0003-066x.55.1.68

Sayre, S., and Wetterlund, K. (2008). The social life of technology for museum visitors. *Visual Arts Research*, 34(2), 85-94. Retrieved from <http://www.jstor.org/stable/20715478>

Screven, C. G. (2004). United States: A science in the making. In G. Anderson (Ed.), *Reinventing the museum. Historical and contemporary perspectives on the paradigm shift* (pp. 160-166). Walnut Creek: AltaMira Press.

Stránský, Z. Z. (1970). Múzejníctvo v relácii teórie a praxe. *Múzeum*, 15(3), 173-183.

Strickland, B. R. (2001). *The Gale encyclopedia of psychology*. Gale Group.

Sungkur, R. K., Panchoo, A., and Bhoyroo, N. K. (2016). Augmented reality, the future of contextual mobile learning. *Interactive Technology and Smart Education*, 13(2), 123-146. doi:10.1108/itse-07-2015-0017

Tesoriero, R., Gallud, J. A., Lozano, M., and Penichet, V. M. R. (2014). Enhancing visitors' experience in art museums using mobile technologies. *Information Systems Frontiers*, 16(2), 303-327. doi:<http://dx.doi.org.une.idm.oclc.org/10.1007/s10796-012-9345-1>

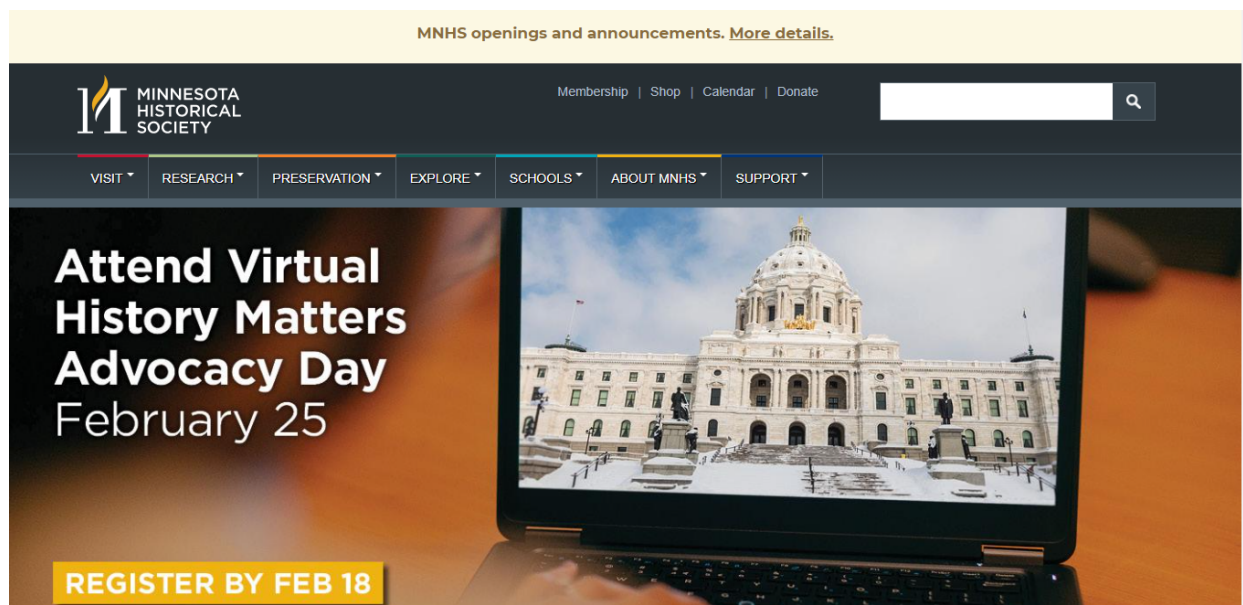
Thomas, S., and Mintz, A. (2000). *The virtual and the real: Media in the museum*. Washington, DC: American Association of Museums.

Thurlow, C., Lengel, L., & Tomic, A. (2016). *Computer-mediated communication*. Place of publication not identified: Sage Publications.

- Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review*, 4(3), 356-367. doi:10.1177/1534484305278283
- Traboulsi, C., Frau, M., and Cabiddu, F. (2018). Active seniors perceived value within digital museum transformation. *The TQM Journal*, 30(5), 530-553. doi:10.1108/tqm-11-2017-0155
- Vallerand, R. (2000). Deci and Ryan's self-determination theory: A view from the hierarchical model of intrinsic and extrinsic motivation. *Psychological Inquiry*, 11(4), 312-318. Retrieved from <http://www.jstor.org/stable/1449629>
- Vallerand, R. J., Pelletier, L. G., and Koestner, R. (2008). Reflections on self-determination theory. *Canadian Psychology/Psychologie Canadienne*, 49(3), 257-262. doi:10.1037/a0012804
- Wheatley, M. J. (1999). *Leadership and the new science: Discovering order in a chaotic world*. Berrett-Koehler.
- Williams, J. M., and Bryan, J. (2013). Overcoming adversity: High-achieving African American youths' perspectives on educational resilience. *Journal of Counseling and Development*, 91(3), 291-300. doi:10.1002/j.1556-6676.2013.00097.x
- Woods, Thomas A. (1995). Museums and the Public: Doing History Together." *The Journal of American History*, 82(3), 1111. Accessed June 10, 2016. doi:10.2307/2945116.
- Yeh, J., and Lin, C. (2005). Museum marketing and strategy: Directors' perception and belief. *Journal of the American Academy of Business*, 6(2), 279-284.
- Zaharias, Michael, and Yiorgos. (2013). Learning through multi-touch interfaces in museum exhibits: An empirical investigation. *Journal of Educational Technology and Society*, 16(3), 374-384. Retrieved from <http://www.jstor.org/stable/jeductechsoci.16.3.374>

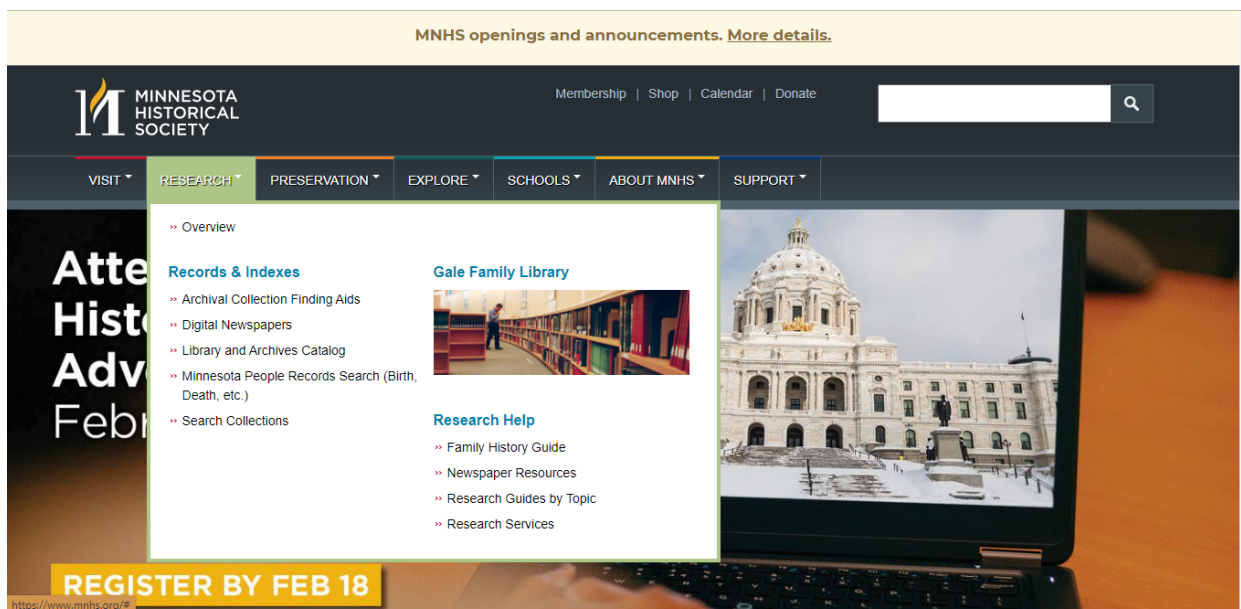
## Appendix A

### Minnesota Historical Society Homepage



## Appendix B

### Minnesota Historical Society Homepage Navigation



## Appendix C

### Minnesota Historical Society Homepage Body Content

The screenshot displays the Minnesota Historical Society homepage with a dark navigation bar at the top containing the following menu items: VISIT, RESEARCH, PRESERVATION, EXPLORE, SCHOOLS, ABOUT MNHS, SUPPORT, and a search icon. Below the navigation bar, the page is organized into several content blocks:


- Explore online resources:** A section with the heading "Explore online resources" and the text: "Until we can welcome you back to our sites and museums, we invite you to continue to learn about history with us online."
- Virtual History Matters Advocacy Day:** A section with the heading "Virtual History Matters Advocacy Day" and the text: "Speak up for history during Virtual History Matters Advocacy Day on Thursday, February 25. This year's legislative session will be important for funding history initiatives, including Legacy Amendment funds. Plan to visit with your legislators remotely to let them know about the important work carried out with Legacy funds."
- Tweets by @mnhs:** A social media feed showing a tweet from the Minnesota Historical Society (@mnhs) dated "Today at 3 pm" about a panel discussion with Dr. Yohuru Williams and other Black history-keepers. The tweet includes a link: [bit.ly/2Mg4JAO](https://bit.ly/2Mg4JAO). Below the text is a photo of four people.
- SHOP:** A section featuring three face masks: one black, one red, and one green, all with the "#HISTORYMATTERS" logo.
- GALE FAMILY LIBRARY:** A section with the heading "GALE FAMILY LIBRARY" and a photo of a woman in a white dress holding a baby. Above the photo is a handwritten note: "61- Thelma Hall - C. P. S. Ingber and mother's portrait". Below the photo is the heading "Researching your family history" and the text: "Research your family's history online with our digital resources."
- EDUCATION:** A section with the heading "EDUCATION" and a partial photo of a person's face.




## Appendix D

## Wilmette Historical Museum Homepage

Visit	Events & Exhibits	Research & Collections	Kids & Teachers	About Us	Shop	Get Involved	Explore History
-------	-------------------	------------------------	-----------------	----------	------	--------------	-----------------




**Wilmette  
Historical  
Museum**



Native Americans at the lakeshore (local artist Mattie Akeley, 1909)

**Museum Temporarily Closed**



The Museum is temporarily closed as a precaution to reduce the risk of contagion and protect our community from COVID-19. Please explore our website to read about local history, do the kid's activities, or use the links for other research. If you have a question, an idea or would like to talk to the staff about any other matter, please email us or leave us a phone message, and we will get back to you as soon as we can. We look forward to opening our doors and seeing you again in person soon! Stay well!

**Wilmette Historical Museum**  
 609 Ridge Road  
 Wilmette, IL 60091  
 (847) 853-7666  
[museum@wilmette.com](mailto:museum@wilmette.com)

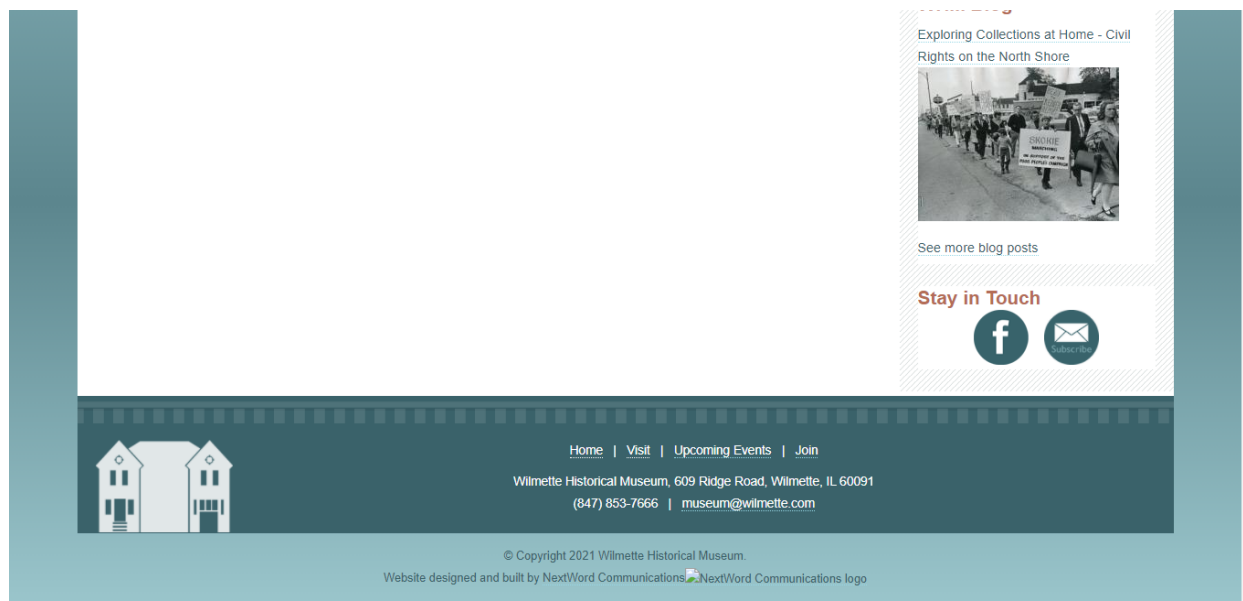
**Museum Hours**  
 Sunday - Thursday  
 1:00 - 4:30 p.m.

**CLOSED AS OF 11/16/2020 TO KEEP EVERYONE SAFE.**

Virtual Wilmette Bingo

## Appendix E

### Wilmette Historical Museum Homepage Footer



## Appendix F

## Warroad Heritage Center Homepage



The screenshot shows the homepage of the Warroad Heritage Center. At the top left is a logo featuring a map of Minnesota with a compass rose, next to the text "MINNESOTA'S HISTORIC NORTHWEST". To the right is a navigation menu with links for Home, About, News, Museums, Exhibits, Membership, Support, and Contact. A search bar is located in the top right corner. Below the navigation menu is a dark brown horizontal bar. The main content area features the title "Warroad Heritage Center" in a large, dark font. Below the title, it says "ROSEAU COUNTY" and "Warroad Heritage Center". A paragraph of text describes the exhibits and artifacts, including Ojibwa artifacts, commercial fishing industry, Northwest Angle, early pioneers, military, fur trade, sports, works by area writers, genealogies, and old photographs. At the bottom, it states "Admission: Donations welcomed".

**MINNESOTA'S HISTORIC NORTHWEST**

Home About News Museums ▾ Exhibits ▾ Membership Support Contact

Search ... Search

## Warroad Heritage Center

ROSEAU COUNTY

**Warroad Heritage Center**

Exhibits and artifacts: Ojibwa artifacts from the Warroad area, the local commercial fishing industry, the Northwest Angle, early pioneers, military, the fur trade, and sports. Plus, works by area writers, genealogies and old photographs, with information on the early lumber industry, mink ranching, boating, transportation, and special holiday exhibits.

**Admission:** Donations welcomed

# Appendix G

## Warroad Heritage Center Facebook Page

Warroad Heritage Center

Typically replies within a day  
[Send Message](#)  
[warroadheritagecenter@gmail.com](mailto:warroadheritagecenter@gmail.com)  
**Closed Now**  
1:00 PM - 5:00 PM  
Nonprofit Organization · History Museum

**Suggest Edits**  
Is this another name for the same Page?  
Alternative Name: Heritage Center Warroad  
Yes Unsure No

**Photos** [See All](#)

**Warroad Heritage Center**  
February 4, 2020 · 🌐  
CALLING ALL COLLECTORS! Do you or someone you know have a collection of fun, cool, or interesting objects or memorabilia in their possession? Whether its tea cu... [See More](#)  
2 Shares  
Like Comment Share  
Write a comment...

OTHER POSTS

## Appendix H

## Museum of Danish America Facebook Page

**Museum of Danish America**  
@DanishMuseum · Museum  
danishmuseum.org

Home About Events Groups More

Like Message

**About** See All

2212 Washington Street Elk Horn, IA 51531

- Celebrating Danish roots and American dreams! National museum, nationally accredited.
- The Museum of Danish America includes the main museum, the 30-acre Jens Jensen Prairie Landscape Park, a Genealogy Center on Main Street, the Jens Dix... See More

10,918 people like this  
11,059 people follow this  
1,433 people checked in here  
<http://www.danishmuseum.org/>  
(712) 764-7001  
Away  
[Send Message](#)  
Price Range · \$  
[media@danishmuseum.org](mailto:media@danishmuseum.org)

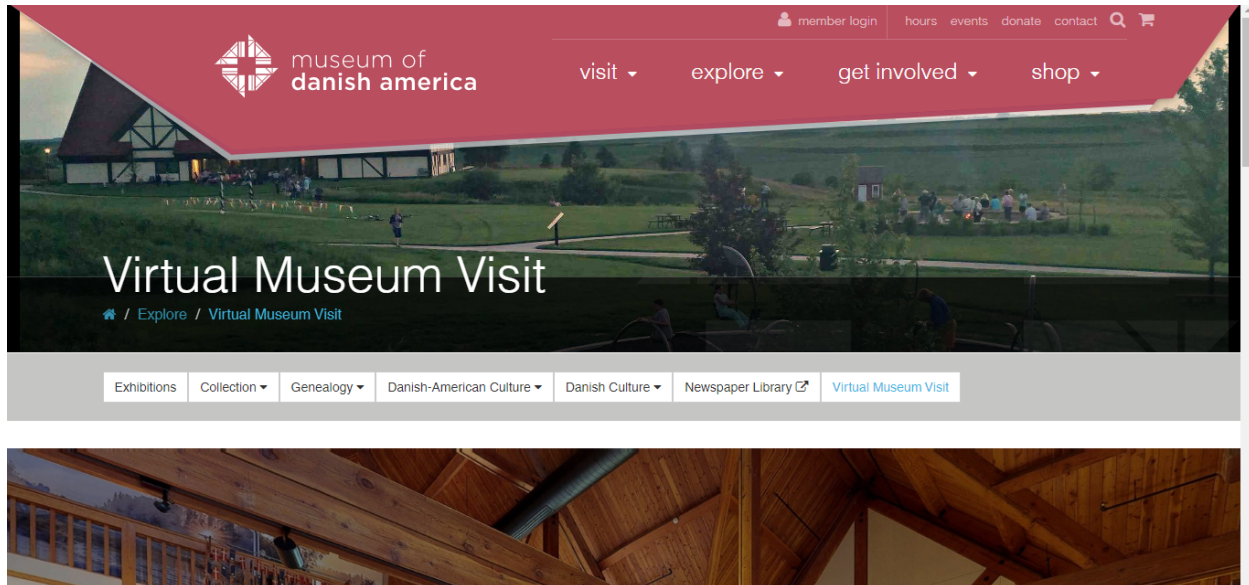
**PINNED POST**

**Museum of Danish America**  
22h

Dr. Ethelene Whitmire of UW-Madison will be our Brown Bag Lunch speaker for March! Her research focuses on African Americans in 20th Century Denmark. If you have any questions for her, please send them to us in Messenger by February 28. We may ask her your question in the interview! 📖 Read "Landscapes of the African American Diaspora in Denmark" here: [https://www.danishmuseumstore.org/.../Landscapes\\_Whitmire...](https://www.danishmuseumstore.org/.../Landscapes_Whitmire...)

Appendix I

**Museum of Danish America Homepage**



## Appendix J

**Maltz Museum of Jewish Heritage Website**

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## ABOUT FREE DIGITAL TOURS

### WHO ARE DIGITAL TOURS FOR?

Middle and high school educators can utilize our two most popular museum tours without stepping foot in the museum: *Stop the Hate* & Lessons of the Holocaust are now online. We've created them to fit within the context of an uncertain environment, giving educators total flexibility for how and when you use the material.

### WHAT DO THE TOURS EXPLORE?

***Stop the Hate*** uses museum artifacts to exemplify expressions of racism and antisemitism in history. Students will explore answers to these questions:

- How are power and influence used to spread hate?
- What is legalized hate vs individualized hate?
- Who are upstanders, bystanders, or perpetrators in any situation?
- Optional: Use your voice to participate in the *Stop the Hate* essay writing contest!

## Appendix K

## JR's Appliance Museum Homepage

**JR's Appliance Museum**  
"The World's Largest Small Electrical Appliance Museum"

Located inside  
JR's Western Store  
51 Highway 59,  
Diamond, MO 64840

JR'S WESTERN STORES  
Click Above to Shop

HOME | OUR STORY | SNEAK PEAK | NEWEST ADDITIONS | CONTACT

**"Travel Back in Time!"**  
- John P. (Trip Advisor Review)

Over 4000 unique, rare electrical appliances from toasters to peculators and razors to waffle irons. Owner, Richard Larrison states, "There are "pinchers" and "perchers," "droppers" and "flopers," "tippers" and "flippers," not to mention the "swingers," "walk-throughs," "flatbeds" and of course, the ever-popular "pop-ups."



## Appendix L

## Century Village Museum Homepage

HOME EVENTS PAGE STORE SUPPORT THE VILLAGE CONTACT US HISTORY VOLUNTEER MORE... CART (0)

Our Grounds are open seven days a week, sunrise to sunset.  
Our Crossroads Museum Store is open Fridays and Saturdays, 11am-4pm

Picture

# The Geauga County Historical Society Century Village Museum

RAISE THE ROOF FUNDRAISER HERITAGE PARTNER SPONSORSHIPS


G Century Village Sunset 01 4K Watch later Share

**amazon smile**

**How does AmazonSmile work?**  
When first visiting AmazonSmile, customers are prompted to select a charitable organization from over one million eligible organizations. In order to browse or shop at AmazonSmile, customers must first select a charitable organization. For eligible purchases at AmazonSmile, the AmazonSmile Foundation will donate 0.5% of the purchase price to the customer's selected charitable organization

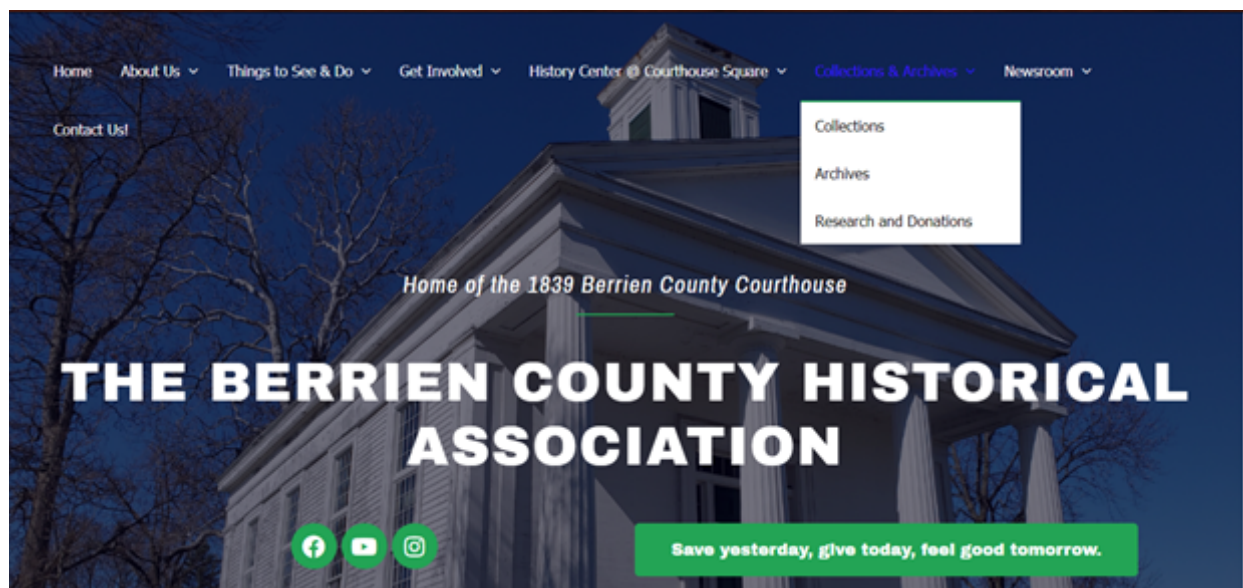
**Use this link for amazon purchases and Century Village Museum will receive a contribution!!**  
<https://smile.amazon.com/ch/34-0762129>

**Preservation, Education, Appreciation**



## Appendix M

## Berrien County Historical Association Homepage



### Collections

Inside our collection vault are thousands of pieces of Berrien County's material culture, including housewares, textiles, farming equipment, and even a few curiosities waiting to be discovered!

Learn more about the collections [here](#).



### Archives

Our archives have thousands of journals, pictures, books, and maps that let us explore the words of the county's residents dating back to its founding.

Learn more about the archives [here](#).



### Researching

Our collections aren't just for our exhibits! Researchers looking to explore the many items in our archives and collections to help with research projects both professional and personal can reach out to us!

Learn more about research requests [here](#).

## Appendix N

## The Dinosaur Discovery Museum Homepage

KENOSHA PUBLIC MUSEUM CIVIL WAR MUSEUM DINOSAUR DISCOVERY MUSEUM

**DINOSAUR DISCOVERY MUSEUM**

HOME VISIT » GROUP VISITS » EXHIBITS » EVENTS » WORKSHOPS » GET INVOLVED » KIDS PAGE » RESOURCES »

**Welcome!** **Discovery Museum**

**SCHOOL GROUP TOURS**

**VIRTUAL SCHOOL GROUPS**

**SCOUT GROUPS »**

**DAY CAMP/DAYCARE GROUP VISITORS**

**ADULT GROUP TOURS**

**JOIN** **DONATE**

The Dinosaur Discovery Museum is one of the most cost-effective ways to visit the Dinosaur Discovery Museum. The Dinosaur Discovery Museum collaborates with the University of Wisconsin-Madison for its research collections.

Wisconsin, is the only museum to focus on the link between meat-eating dinosaurs and birds. In association with the [Carthage Institute of Paleontology \(CIP\)](#) and its on-site laboratory, we conduct ongoing research in the study of dinosaurs. The Dinosaur Discovery Museum offers field work, and education programs. This includes the collection and preservation of dinosaur specimens for its research collections.

**COVID-19 Updates**

**For the safety of all visitors and staff, the following changes and policies are in place until further notice:**

Temporary Hours: 12pm-4:30pm Tuesday-Saturday; Closed Sunday-Monday; See above for any special changes to hours.

<https://museums.kenosha.org/dinosaur/group-visits/> or other PPE is REQUIRED and must cover your mouth and nose

## Appendix O

**The Dinosaur Discovery Museum Digital Collection**

**THE DINOSAUR DISCOVERY MUSEUM KENOSHA WISCONSIN.**  
**The Dinosaur Discovery Museum : Selections from the Permanent Collection**

[Start Exhibit](#) [Table of Contents](#) [List of Exhibits](#) [Museum Home Page](#)

The Dinosaur Discovery Museum (DDM) in downtown Kenosha is a truly unique place. It is the only museum in the United States designed specifically to show the evolutionary transition between dinosaurs and birds and it does so with the largest collection of theropod dinosaurs in the country. The museum is also home to the Carthage Institute of Paleontology (CIP) in partnership with Carthage College. It is here that visitors can watch as actual dinosaur fossils are cleaned and prepared for research. CIP paleontologists are also on the cutting edge of the latest discoveries, conducting research on the growth and development, also known as ontogeny, of giant dinosaurs like *Tyrannosaurus rex*. During the summer, students and volunteers join the paleontologists from the DDM and CIP in collecting new specimens from the Hell Creek Formation of southeastern Montana.



Dinosaur Discovery Museum / 5600 Tenth Ave / Kenosha, WI 53140 / 262-653-4450

## Appendix P

## The Chicago Museum of History Website



CHICAGO HISTORY MUSEUM

NOTICE → We are reopening March 4 [more](#)

Contact | Directions

VISIT EXHIBITIONS PROGRAMS & EVENTS EDUCATION COLLECTIONS JOIN & GIVE 🔍

# ONLINE RESOURCES

## ARCHIE Online Catalog

Search ARCHIE for information on the Museum's holdings that are served through the Research Center. Please note that while this resource is extensive, it is not exhaustive. For assistance researching materials that are not yet available in the online catalog, we recommend [contacting the Research Center](#) for additional guidance.

Materials described in ARCHIE include:

- Manuscripts cataloged since the mid-1980s
- Books and periodicals

Appendix Q

The Henry Ford Website



Appendix R

**Linn County Historical Society Homepage**



Appendix S

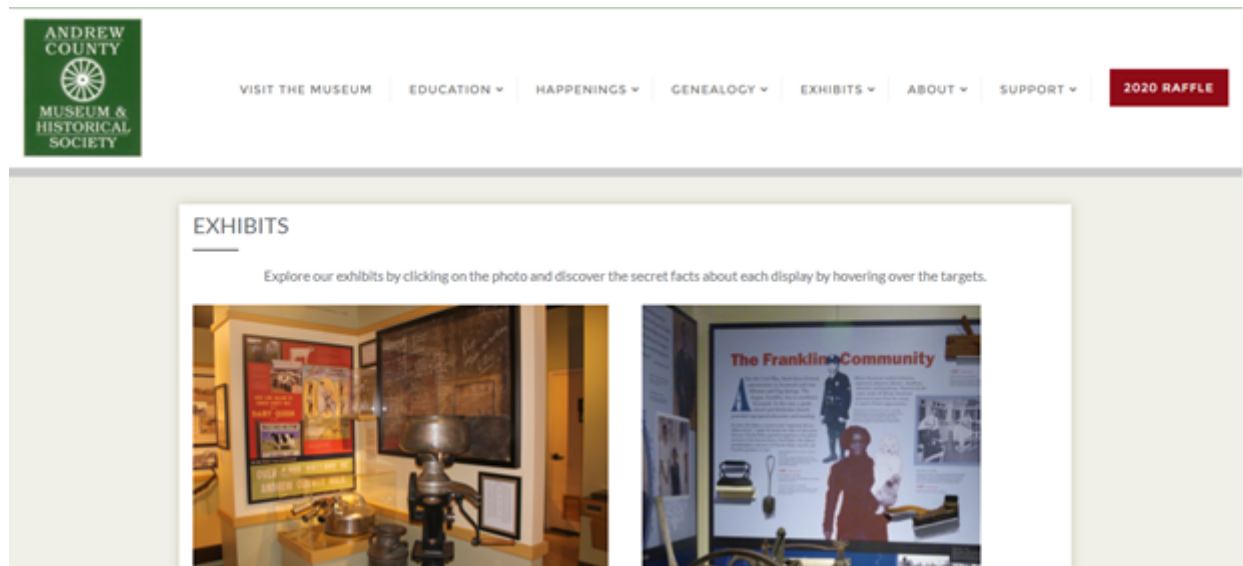
Linn Country Historical Society Website UX





## Appendix T

### Andrew County Museum & Historical Society Website



Appendix U

The Hamilton Wood Type & Printing Museum Homepage



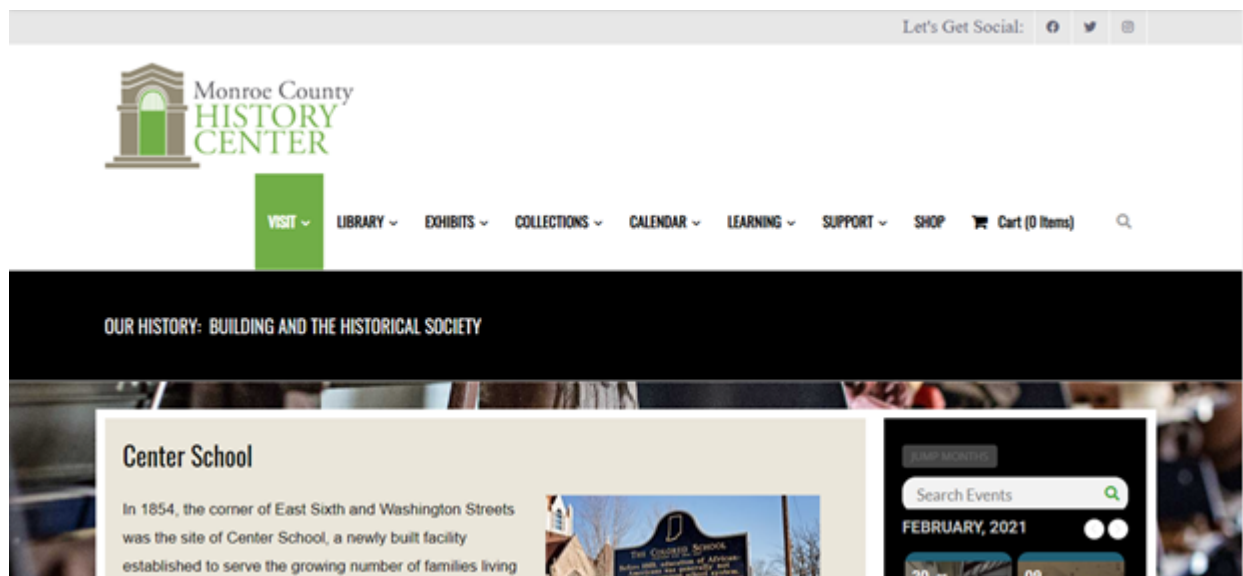
Appendix V

**The Hamilton Wood Type & Printing Museum Virtual Event**



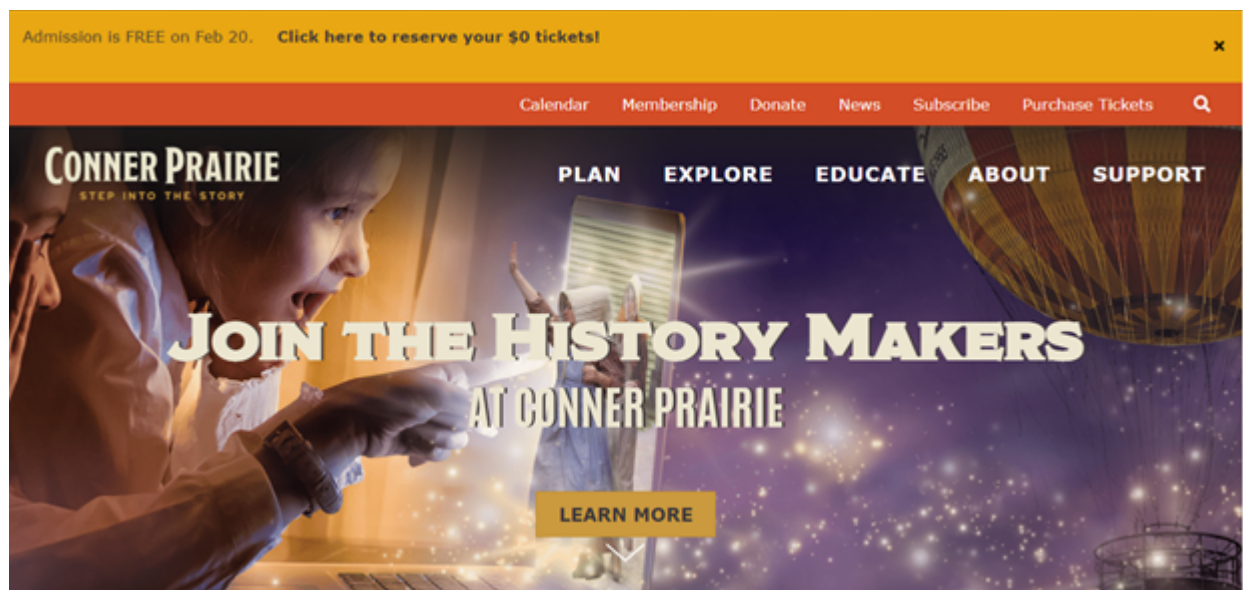
Appendix W

The Monroe County Historical Society Inc. Website



Appendix X

Conner Prairie Living History Museum Homepage



## Appendix Y

### Conner Prairie Living History Museum's Facebook Page

The image is a screenshot of the Conner Prairie Facebook page. At the top, there is a navigation bar with icons for home, profile, video, and messages. The profile header features the Conner Prairie logo, the name "Conner Prairie", the handle "@connerprairie · Museum", and a "Send Message" button. Below the header are navigation tabs for "Home", "About", "Events", "Videos", and "More". A "Like" button and a search icon are also visible. The "About" section is expanded, showing two informational items: one about first-person interpretation and another about the museum's location and visitor statistics. A "PINNED POST" is also visible, dated January 12, with the text "Join the History Makers for Winter Weekends, Saturdays and Sundays, 10 AM - 4 PM." The page also shows "52,294 people like this" and "53,564 people follow this".

**Conner Prairie**  
@connerprairie · Museum

Home About Events Videos More

Like

**About** See All

- 1 We bring history to life through first-person interpretation in our outdoor experience areas, as well as through interactive exhibits inside and out.
- 1 Spanning more than 1,000 wooded acres in central Indiana, Conner Prairie welcomes nearly 400,000 visitors of all ages annually. As Indiana's first Smi... See More

52,294 people like this  
53,564 people follow this

**PINNED POST**

**Conner Prairie**  
January 12 · 🌐

Join the History Makers for Winter Weekends, Saturdays and Sundays, 10 AM - 4 PM.