Measuring Visitor Engagement in the Mission Museum

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Measuring Visitor Engagement in the Mission Museum

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Action Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Education

California State University Monterey Bay

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Measuring Visitor Engagement in the Mission Museum

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Abstract

This study evaluated participant engagement of portable didactic content based on the physical placement within the California Mission Museum of San Juan Bautista. Didactic content was presented in the form of an extended learning card (ELC), which further offered web based resources relating to the mission museum’s Alfred Hitchcock *Vertigo* exhibit display case. Participants for this study were anonymous museum visitors. Engagement was measured by way of participant obtainment of ELC based on ABAB design. Placement of ELC was alternated in location from the mission gift shop and the exhibit display. Participant engagement of web based resources after ELC obtainment was also measured. Data indicated a substantial increase in participant obtainment of the ELC when didactic content was placed in close proximity to the exhibit. Data concerning extended learning web resources presented a lack of participant engagement and future research is needed. Discussion of findings presented relate to the development of effective museum based practices and future studies concerning access to virtual museum educational resources.

*Keywords:* museum education, visitor engagement, virtual access
Measuring Visitor Engagement in the Mission Museum

**Literature Review**

In museums, an essential element of the educational process begins with the presentation of didactic content. For example, in traditional museums didactic content is presented in text and image based formats, such as brochures, educational posters or exhibit and artifact labels. Didactic content is the primary vehicle and foundation that museums utilize to provide visitors with essential information about the museum itself, associated collections, specific artifacts and extended learning resources (Hein, 1998; Rudman, Sharples, Vavoula, Lonsdale & Meek, 2008; Wallace, 2014).

Providing easily obtainable information about the available resources, artifacts, and educational materials is an important aspect of museum education. Museums are consistently trying to engage visitors with their unique resources and provide quality educational opportunities. To help encourage this, museums regularly host public events, workshops, and invite guest speakers to present on various topics usually related to specific museum exhibits or community interest and culture. This often helps to increase revenue and public engagement, education, and awareness of museum resources (Enasel, 2011; Smith, 2014). In recent years, technology has also offered museums another reliable and increasingly prevalent medium to support public engagement.

Today there is an unprecedented advancement of technology and with the public’s growing use of the internet, museums can now offer the public unique awareness and access to some of the world’s most incredible collections (Institute of Museum and Library Services, 2009). Both museum educators and educational professionals in general have become increasingly aware of
the benefits of making museum resources and experiences available for the public (Gano & Kinzler, 2011; Griffin, 2004; Pierroux, 2005; Silguero, 2013). Current trends in educational programing reveal an increase in the utilization of digital platforms to create and link content for specific learning communities and the general public. This is apparent in the virtual collection access models that are being developed and implemented by various archives and related educational institutions (Bouck, Courtad, Heutsche, Okolo, & Englert, 2009; Ferguson, 2001; Institute of Museum and Library Services, 2009; Kratz & Merritt, 2011).

Congruently, and in light of our societies’ increased reliance on technology, educational researchers are examining the shifting roles museums and libraries will play in our rapidly changing educational landscape (Kratz & Merritt, 2011; Styliani et al., 2009; Tallon, & Walker, 2008). Further, the development of resources crafted from museum and library collections are being continually refined and are increasingly funded by interested organizations including: aspects of government, educational foundations, and private sector businesses such as textbook publishers and technology research groups (Camarero, Garrido, & Vicente, 2011; Cole & Shreeves, 2004; Fitzsimmons, 2000; Silguero, 2013). This trend suggests that museums will progressively find wide ranging support by developing resources designed for technology-based education.

There is a pertinent opportunity for museum professionals and educators to implement policies and programming, which support the development of dynamic resources to incorporate technology as a visible part of the museum’s pedagogies of instruction. Furthermore, these technological resources once understood and developed may provide learners with the new experiences needed to subsequently expand their technical knowledge, creating meaning, while accommodating new cultural aptitudes from which to engage the world.
The current dynamics of educational reform are geared towards the development of 21st Century skill sets, which meet the demand of an increasingly global market propelled by advances in technology and science (Clouse & Nelson, 2000; Institute of Museum and Library Services, 2009; Kratz & Merritt, 2011; Kilfoye, 2013; Sheppard, 2001). Relative to this, the developing educational paradigm for museums and similar learning institutions will incorporate instructional methods which prominently center on educational directives that are advancing critical thinking, cooperation, and innovation (Kratz & Merritt, 2011). The use of technology to help support educational reform have additional organizational benefits to the participating educational institutes, museums and libraries.

The employment of technology that aids in public access and the cultivation of virtual educational resources, provide tangible opportunities for learning institutions to form beneficial partnerships. Such partnerships help educational organizations to pool and share varied resources and foster innovation to enhance the objectives of educators and students. Researchers advocate for the continued use of technological tools to fully incorporate and refine structured, informal, and open collaboration between educational institutions and visitors (Institute of Museum and Library Services, 2009; Kratz & Merritt, 2011; Simon, 2010; Zorich, 2010).

In partnership with schools and other learning institutions, museums and libraries are also uniquely positioned in the educational landscape to facilitate and complement learning greatly by incorporating virtual platforms to share their unique educational content (Barneche & Hernández, 2015; Zorich, 2010). Further, virtual access and content derived from museums and library collections can be constructed to meet the specific needs of their communities (both broadly and focused) to provide essential real world educational experiences and opportunities for advancing learning (Institute of Museum and Library Services, 2009; Kratz & Merritt, 2011;
Zorich, 2010). The alignment of present professional standards recommended by museum and library organizations match broad reaching educational reform (Institute of Museum and Library Services, 2009; California Dept. of Education, 2010; Silguero, 2013; Troutner, 2009).

Subsequently, these museum and library standards have far reaching implications for museum educators who are intent on aligning their organizations with these stated reforms. Museum educators and their communities will benefit greatly from studies that offer measured and practical means of which to integrate these new standards to existing exhibits and presently developing virtual learning experiences.

Additionally, current California K-12 educational criteria, specifically the implementation of the Common Core State Standards (CCSS), are designed to support students in the development of information literacy skills (Common Core State Standards Initiative, 2016). In other words, students must acquire the required skill sets necessary to discover, retrieve, evaluate, and utilize relevant information effectively (California Dept. of Education, 2014). Moreover, museum collections can help to address specific educational subject standards, further offering learners applicable experiences and environments, which help to develop important 21st Century information skills (Institute of Museum and Library Services, 2009; Kratz & Merritt, 2011). Therefore, museum educators intent on offering virtual resources to the public can support their educational goals by better understanding the dynamics involved in effective presentation of didactic content. By understanding how visitors engage with didactic content, museum educators can be more effective in delivering subsequent virtual access to their collections and archives.

Museums and Access to Educational Resources. Historically museums, libraries, and similar community centers have strived to offer the public access to important educational
resources and experiences (Hein, 1998; Herr-Stephenson, 2011). These community services in their various forms have subsequently helped to shape cultural perception and community knowledge (Lewis, 2011). Museum exhibits and collections in this regard have mirrored both community and broader general interest. From the broader context, public access to these educational resources and services are the results of social reforms established during the U.S Progressive Era (1880-1920). These progressive based reforms were intended to address social inequality and expand the tenets of democracy. By ensuring public access to a great range of educational resources, museums effectively aid in the development of informed citizens and a healthy republic.

In public education as well as museums, said progressive policies have supported the integration of student centered curriculum based on everyday experiences, guided by the interest of students, as well as the concerns of the immediate community (Herr-Stephenson, 2011; Kidd, 2014). Effectively, the ideals of the Progressive Era served as the scaffolding from which our modern museums, libraries and community centers initially find their intended philosophical bearing.

Over the succeeding century, studies in the United States attest to the public’s enduring engagement of these cultural intuitions, and visitor attendance of museums and libraries collectively in 2011, was about seven and half million people daily. Associated demographic studies present noteworthy findings that suggest that one’s level of education is a more significant determent of visitor attendance than that of wealth and interestingly, male and female attendance was generally found to be equal while minority populations visited museums less than whites (Smith, 2014). This suggests that although museums remain viable public resources there is still need to foster engagement in some of our more diverse communities.
In recent years, museums have increasingly looked to encourage more community engagement. In practice, some museum educators have advocated for the moderation of the scholarly or authoritative voice of museums by promoting more interactive exhibits, programs and participatory experiences. Museums and like-minded community programs, in this context, have utilized collection content to create exhibits and programing in collaboration with visitors (Herr-Stephenson, 2011; Kidd, 2014; Knott, 2010; Simon, 2010). These recent shifts in philosophical orientation have formed parallel to the advancement of technology and the digitation of museum collections. This has been especially relevant for heritage based museums which provide stewardship of community memory established from historic documents and artifacts. The advancement of technology for heritage museums can serve as the basis for digital preservation and an effective means of providing community access to educational resources.

**California Missions Museums of Monterey.** Within the boundaries of the Catholic Diocese of Monterey there are eight historic Spanish Colonial Missions. This includes the California Missions of Carmel, Santa Cruz, San Juan Bautista, Soledad, San Miguel, San Antonio, San Louis Obispo as well as the San Carlos Cathedral of Monterey. These historic structures each house their own functioning museum all of which stand today as architectural and cultural markers of four significant historic eras.

The eras include the 9-15 centuries of Native American presence and history before the final 1769 expansion of the Spanish empire into what is now known as California (Hackel, 2005). These Missions served as landmarks to both Mexico and the United States at the intersection of culture and rivalry during the formative years of the two fledgling governments. During the turbulent American Gold Rush era the Missions of California experienced differing fortunes ranging from prosperity to nearly total abandonment (Starr, 2005).
Today’s restored Missions and their museums have become contested spaces, either exalted or scorned based on one's given sociopolitical perspective. Academically, the Missions are at the foundation of California State history and grade school curriculum (California Department of Education, 2014). From an economic outlook the Missions and their museums have become the foundation of a multimillion dollar tourist industry while at the same time serving as spiritual and social centers of their given communities (Norkunas, 1993; Pedelty, 1992).

The history of the California Mission is complex and not easy to present concisely. Various Mission museums rely primarily on the extraordinary efforts of volunteer staff and docents to support the day to day operational needs. Subsequently, over the many years Mission museum exhibits have remained primarily documentary based and didactic content (labels) present little to no interpretation other than relevant dates and artifact identification. As historical exhibits inform our culture it can also hold sway over our collective experience and memory, based on how it is remembered and how it is presented (Norkunas, 1993; Pedelty, 1992). That is, knowledge and learning are built upon and shaped considerably by previous experiences and past learning (Carley, 1986). From this perspective, the California Missions have the opportunity to engage their communities and contribute greatly to the public discourse and memory.

Within the museum collections of the Missions of Monterey there is a wealth of educational resources pertaining to the vibrant history of California and the greater Monterey Peninsula (Neuerburg, 1987). These mission museum collections have been utilized for countless historical exhibitions and educational programs. Still, many collection items and their important histories have never been shared with the public outside of the Mission doors, in large
part because of their relative age, rarity and/or fragility. In recent years the Mission museum collections have had limited presence online and has yet to establish an extensive virtual presence.

In the Missions, museum collection information and related didactic content is primarily presented to the public through basic labels and brochures. Educational didactic labels in their various forms, serve as a primary medium from which to introduce museum visitors to both virtual access and successive educational content. Accordingly, testing, analyzing and developing strategies to understand visitor’s engagement of these educational mediums become the basis of developing effective public access to virtual educational resources.

Furthermore, with the continuous advancement of technology and its common use in our society, the creation of content for virtual use and access can be understood as an increasingly functional and practical way to disseminate educational resources to the public. Additionally, with the broad establishment of Common Core State Standards (CCSS) and the germane content of the Mission museum’s collections, the development and application of virtual accessibility to this important educational resource is an invaluable community service that has yet to be effectively established or internally studied.

Technology has become an integral part of our everyday experience and it plays a vital role in shaping this process of knowledge attainment. This can arguably be extended as well, to a community’s identity and own understanding of itself. In this regard the Mission museums can offer their communities access to important educational resources that can bring insight and meaning to diverse histories and public memory. An example from the Missions Museum’s collections might include the investigation of the life ways of Native American and Hispanic communities, which can be further understood and explored virtually by presenting related
artifacts and histories of the various historical eras. This might also include online interviews with descendants of Mission Era Indigenous Peoples giving the public a broader contemporary understanding of these dynamic living histories. Museum educators must also find effective ways to share and make accessible these educational resources with the general public.

**Integrated Media Communication & Didactic Placement.** The use of technology and multimedia as an interpretive tool is not a new innovation in the museum setting. For many decades museums have incorporated various iterations of audio tours, exhibition videos, and other media to present and elaborate on exhibitory within the museum (Smith, 2014, Tallon & Walker, 2008). As technology has become more prevalent, museums have incorporated internet based virtual content to supplement and enhance educational aims. Virtual access to museum resources also offers learners other applicable space in which to advance their learning and build on essential information skills and knowledge (Herr-Stephenson, 2011, Palincsar, 1998, Institute of Museum and Library Services, 2009). Accordingly, museums can benefit the publics’ educational needs by aligning content to the interest and history of their unique communities while also working to understand how best to effectively present visitors virtual access to their collections. In this regard, the historic California Missions of Monterey can offer museum education researchers a unique museum setting that is yet to be significantly studied.

Over the last two decades museum educators have strived to harness the benefits of virtual access through engagement in both passive and active means to market extended learning to the public. This includes the development of museum based websites, the use of various evolving methods of multimedia exhibit didactics, the adaptation of Quick Response Codes (QR codes) and even virtual museums where content and resources are only available online (Kratz & Merritt, 2011; Schultz, 2013; Tallon & Walker, 2008). Furthermore, recent innovations in
mobile device technology has offered museum visitors in real time access to exhibits and extended learning content. The growing use of social media and application based technology has offered innovative engagement of content which museums are only recently understanding how to integrate effectively. These multimedia based resources have helped to link and develop community engagement and visitor creativity, offering the public the ability to personally document and even add to exhibit interpretation (Rudman et al., 2008; Simon, 2010). This new phase of virtual based communications as it relates to museums is still in its early stages of study and development hemmed increasingly to the advances of technology.

Numerous Mission museums have yet to integrate substantial access to virtual resources and collections. Important to this proposed effort and present study is understanding the elemental dynamics involved in effectively integrating more traditional media content with internet based resources within the museum. Current market research in the field of integrated marketing communication (IMC) can greatly help to illuminate the dynamics of crossover engagement from traditional media to internet based resources.

IMC in practice and theory is a model in which a company organizes and integrates its various marketing communications to present a consistent and unified message to the public (Kim, Han, & Schultz, 2004; Lee & Park, 2007). IMC, in theory and in practice, also attempts to understand and integrate the publics’ loyalty to traditional advertising resources such as print media to the advances and increasingly common use of web based resources and technology. IMC also markets to understand and capitalize on these relationships in order to bring clarity of message to all channels of customer engagement to a specific product or brand. As such traditional media more recent innovations have been fashioned to encourage web based engagement (Kim et al., 2004; Lee & Park, 2007; Lepkowska-White et al., 2014).
Related IMC studies look to advance coordination of media resources and content by taking customer orientation in account. Consumer engagement is influenced by the specific components of print media such as method of delivery, visibility, readability and size of print typeface (Hein, 1998; Lee & Park, 2007; Lepkowska-White et al., 2014; Kim et al., 2004). Market studies also suggest that crossover web referencing engagement from print media is aided with the addition of standard web referencing appeals. This is delivered in the form of informal content, such as; “please visit our web site for more information…” or “for more information visit…” (Lepkowska-White et al., 2014). Marketing from this perspective includes the customer as an active participant driven by motivation and not as a static or passive consumer. Accordingly, crossover engagement becomes an important measurable resource from which to gage consumer orientation and interest of products and companies.

Public engagement studies have appraised the effectiveness of print media, which presents web referencing content. Public deliverables in this context have reviewed both mass marketing methods as well as specialized market engagement in the form of mailed in weekly advertising, brochures, product placement billboards, and print posters and postcards and their virtual media counterparts (Dahlén, Murray, & Nordenstam, 2004; Hubenthal, O’Brien, & Taber, 2011; Lepkowska-White et al., 2014).

Museum based research echoes many of these market based findings as print based exhibit didactics and media practices have also been studied, and general standards formulated and regularly reviewed and implemented (Hinton, 2000; Ravelli, 1996; Wallace, 2014; Wells, Butler, & Koke, 2013). This includes the various means of content delivery, the formulation and relation of graphic content in didactic posters, artifact labeling, and use of museum brochures. Museum researchers have also conceptualized visitor orientation or physical location within the
museum environment as an indicator of how best to engage visitors interest as delivered directly by way of mobile devices and relating virtual content (Herr-Stephenson, 2011; Sung, Hou, Liu, & Chang, 2010; Tallon & Walker 2008; Wells et al., 2013).

**Understanding Elemental Relationships.** Both marketing and museum based research have looked to integrate virtual resources as a way to capture visitor interest and/or customer engagement of intended products/exhibits, it appears that some of the more elemental relationships between visitor - traditional print media -and web based resources have yet to be understood (Rudman et al., 2008). Accordingly, identifying and understanding these elemental components and their varied relationships helps to create an informed foundation from which to establish best practices and reach the broad previously stated educational goals.

In the museum setting public engagement of didactic content in its various forms can be measured in multiple ways. By measuring and analyzing public engagement with didactic and virtual access of Mission museum materials, museum educators can find ways to alter and improve current practices. In this way, museum educators may have a more focused understanding of the actual relationship between web referencing didactic content, its spatial placement as it relates to intended exhibitory and visitor engagement within the museum setting. Through the understanding of the elemental dynamics of visitor engagement of didactic content within the museum and crossover engagement of web based content, educators will be able to establish informed professional practices and better address educational standards and goals.

Furthermore, the potential virtual educational resources that can be derived from the Diocese of Monterey Mission museum collections would be a valuable community contribution. Virtual access offers the public further insight to some of California’s most important historical landmarks of the past two centuries. This includes primary resources, which give light to the
cultural dynamics that have shaped and defined the Monterey region identity—both culturally and economically for centuries. As such, the Diocese of Monterey Mission museum collections offers the public a unique pathway from which to better understand these important histories. Understanding the dynamics of how best to present these resources to visitors is paramount.

This present study measured visitor engagement of didactic content based on the physical location of extended learning cards (ELC) within the Mission Museum of San Juan Bautista. Specifically, this study asked and looked to answer: How does the location of an extended learning card impact Mission San Juan Bautista museum visitors’ interest and engagement of the Alfred Hitchcock Vertigo display case? Additionally, this study measured visitor engagement of virtually accessible extended learning content based on Mission museum exhibits as delivered from web referencing ELC. Subsequent findings and discussion produced from this study will aid in the development of best practices and guidelines for offering the public virtual access to the Diocese of Monterey Mission museum collections.

Methods

Participants

For this research participants included the visitors to the Mission Museum of San Juan Bautista over a one-month period. The estimated attendance was approximately 6,700 visitors a month. For the purposes of this study, utilizing convenience sampling there was an estimated 558 potential participants over a total of 12 sessions. The participants for this study remained anonymous. The final estimated number of participants were determined by the total of extended learning cards (ELC) obtained by museum visitors. Accordingly, there were a total of 61 participants for this study based on ELC obtainment.
Setting

The setting for this study was the California Mission Museum of San Juan Bautista. The Mission museum includes historic artifacts from four historical periods including; that of California Indigenous Peoples, the Colonial Spanish era (1769 to 1821), the subsequent Mexican period (1821–1846) and our current U.S American era (1846- present) (Hackel, 2005; Starr, 2005). The Mission of San Juan Bautista hosts an estimated 80,000 visitors each year from all over the world (A. Slilva, Gift Shop Manager, personal communication, December 4, 2015). The Mission is located in San Benito County in the city and the Catholic Parish of San Juan Bautista. The Parish of San Juan Bautista is a part of the greater Catholic Diocese of Monterey. The California Mission of San Juan Bautista is one of California’s most historically significant and well visited historical sites. The Mission is a National Historic Landmark and San Juan Bautista is included on the National Register of Historic Places and is a designated California State Landmark #195.

Materials

For this study the Mission museum’s Alfred Hitchcock’s Vertigo display case was utilized. This case contains memorabilia associated to the Hollywood movie Vertigo which was directed by Alfred Hitchcock and was partially filmed at Mission San Juan Bautista in 1958. Extended learning cards (ELC) were used for this study. Each card had the same didactic content and web reference including; an image of the Vertigo artifacts/display exhibit and text that states “For More Information About This Display Please Visit” (see Appendix A). The ELC were standard postcard size (3 1/2 by 5 1/2 inches).
Variables

The extended learning card’s location within the Mission Museum of San Juan Bautista was the independent variable. The first location was the front of the Mission museum entrance and the second was in front of an artifact display case. A display label which accompanied the ELC requested that potential participants take one card only per visitor. For the purposes of this study there were two dependent variables(s) (DVs). The first DV is the number of extended learning cards obtained by the museum visitors. Each ELC taken by a visitor was counted as one participant engagement. The second DV is the number of participants that used the provided link to access virtual content about the Alfred Hitchcock’s Vertigo display case (see appendix B). Multiple engagements per participant are not individualized for the purposes of the online portion of the study. That is, only independent engagements were counted. Investigation days and times were consistent throughout the study.

Design

This study followed ABAB design to evaluate the participant’s engagement with didactic content based on placement of the ELC. Four separate extended learning cards were used. These four cards were identical except for the web link printed on the card. Four different web addresses were utilized in order to differentiate data during ABAB data collection periods. All web addresses remained open until the end of the study in order to record and measure visitor extended engagement of virtual content.
Procedure

**Baseline.** The ELCs were placed at the front desk of the Mission gift shop entrance. Baseline data were collected over individual sessions until observed stable and not moving in a therapeutic direction of a range between 0-2 engagements. The Mission staff was asked to not bring additional public attention to the extended information card during the course of the study. Transition from baseline to treatment occurred when three stable sequential data points were observed.

**Treatment one.** During the first treatment period of the study, the ELC were placed next to the *Vertigo* display case. The number of ELC cards obtained by visitors was recorded. Additionally, the number of independent visits to online content was recorded. Transition back to baseline conditions was restored when three sequential data points exhibited visitor obtainment of ELC at an engagement range of 5 and above.

**Baseline two.** Baseline conditions and parameters were replicated and data were recorded.

**Treatment two.** Treatment one conditions and parameters were replicated and data were recorded.

**Interobserver Agreement and Procedural Fidelity**

For 100% of the study sessions and phases, an independent observer calculated the number of ELC obtained by visitors. Additionally, the independent observer also noted the total number of website visits made during all study session periods. IOA was calculated and there was 100% average agreement for each phase and session of this study.
To ensure procedural fidelity for this study, digital photos were taken of the ELC’s location to indicate and record placement and the date/time of the research session. The ELC was photographed at the beginning of every session of the study.

Results

Figure 1 presents graphed results for this study with the x axis representing the number of total sessions over each phase of this study and the y axis represents the highest number of participant engagements observed in any one session rounded to the first even number. A total of 12 sessions were observed in all and the highest number of engagements recorded in any one session was 17. Initial baseline for this study was established by a participant range of 0-2 engagements which were consistent over three sequential sessions (see Figure1). Participants’ total engagement of the ELC for the initial baseline period was 0. Subsequently, there was no measurable engagement of the online content.

![Participant Engagement of Extended Learning Cards](image)

*Figure 1. Participant engagement of extended learning cards*

During the treatment one phase, participant engagement of ELC ranged from 6 - 14 over three sequential sessions. Participants’ engagements respectively for the three sequential data
points were 6, 8, and 14 totaling 28. The average number of engagements for this data set was 9.3. Participants’ engagement of online media has yielded no measurable results.

The baseline two phase was established over three sequential data points with an observed range of 0-2 participant engagements. Respective engagements were consecutively measured over three sessions; 0, 1, 0. The average for baseline two was 0.3 and the range was 0-1. There was no measurable participant engagement of online media.

The final intervention period a range of 6-17 was recorded over three successive sessions. Participants’ engagements respectively for the three sequential data points were 17, 6, 9 with a total of 32 and a mean of 10.6. Finally, crossover engagement of online media resulted in one website view on the final day of this study. This was the only online engagement observed for the entire study.

The average number of participant obtainment of ELCs showed an increase of 9.8 engagements from all baseline conditions (average = 0.17) to intervention conditions (average = 10). The total range of all treatment periods was from 6 – 17 engagements. Participant engagements respectively for each phase were 0, 28, 1, and 32. There were a total of 61 participant engagement over the entire study.

**Discussion**

The purpose of this study was to examine visitor engagement of ELC based on location in the Mission museum. During baseline phases, when the ELC was placed in the museum gift shop, only one participant engagement was observed. Although the ELC was readily available and highly visible it is reasoned that the relatively low number of engagements were associated to the location of the didactic contents proximity to the intended exhibit display. Presumably,
participants were less inclined to obtain the ELC cards because the mission gift shop context did not visually encourage engagement as the intended exhibit did.

Once the ELC was placed adjacent to the *Vertigo* exhibit, participant engagement with the ELC increased significantly during treatment periods. Accordingly, it is reasoned that the ELC placement and proximity to the intended exhibit display encouraged participant engagement. There is a functional relation demonstrated between the placement of ELCs and visitor engagement. Therefore, results for this study suggests there is an observable relationship between participants’ engagement of ELCs (web referencing didactic content) and its specific location to the relating San Juan Bautista Mission Museum, *Vertigo* exhibit.

These findings offer museum educators further resources from which to understand the elemental relationships and foundational mechanisms of visitor orientation and engagement of the Mission museum artifacts. This research also brings awareness to other elemental relationships as well as foundations for future studies which might inform the development of virtual access of Mission museum collections and related educational resources.

Based on the obtainment of the ELCs and an estimated 558 potential engagements for this study there were 61 total participants. Where it is likely that many more museum visitors during the course of this study were aware of the presence of the ELC in its two presented locations, interest and engagement of the content may have additionally been driven by previous knowledge of the Hollywood movie *Vertigo*.

Other factors attributed to the museum setting may have contributed to participant obtainment of the ELC’s during the first treatment phase. This was indicated by the measured increase of engagements as data collection periods progressed towards the weekend, which may potentially be related to increased attendance. Additionally, during the second intervention
phase of this study the variance levels of participant engagement between sessions may also relate to attendance of the Mission museum. Visitor engagement may have been impacted further by attendance fluctuations due to scheduled tours and/or religious holidays.

Accordingly, museum educators intent on conducting similar studies might coordinate future research and resources to match high attendance periods in order to optimize potential participant engagements. This strategy will ensure that future research data is observed and obtained during optimal study conditions.

Increased visitor engagement of didactic content during intervention periods may also be a reflection of the ELCs uniqueness within the museum environment itself, as no other exhibit offered similar obtainable didactic resources. Interestingly, this insight might offer museum researchers another potential method in which to determine engagement and interest of museum exhibitory. Potential didactic engagement studies in this regard might be contained to distinct sections of a museum while offering ELCs for multiple exhibits.

In addition, findings indicate that participants do not attempt to engage in behavior of accessing web based extended learning content after obtainment of ELCs. This might suggest that standard online web address references alone may not be an effective means to promote virtual extended learning to museum collections and content. Potentially these presented outcomes might have been influenced by the additional efforts necessary to engage printed web address content. These findings along with previous research suggest that visitor engagement of web referencing didactic content might benefit from other forms of integrated media access such as social media (Lepkowska-White et al., 2014; Rudman et al., 2008). For future studies, museum educators might include virtual exhibits and content designed especially for social
media platforms. Accordingly, related museum didactic content might be specifically designed to reference social media sites.

Future studies might also consider the implementation of quick response codes (QR codes) and references to social media to ELCs didactic content for comparison studies. The rationale being that immediate access and social media via mobile devices and QR codes might encourage further engagement of web based materials. Additionally, for comparison purposes other Mission sites as well as museum exhibits might be employed for future studies.

Comparative studies might also consider the use of electronic tablet technology which could be programmed to offer direct access to interpretive material or exhibit specific interactive experiences. Visitor engagement can be further measured by tablet based programming which can offer researchers extensive data of visitor interest and engagement. Related data collection methods might include measurements of visitor time spent with specific exhibits offering researchers additional information about effectiveness of display or exhibition design.

**Conclusion**

This present study offers museum educators further insight into the dynamics of visitor spatial engagement of web referencing didactic content. The research presented is intended to add to current scholarship in museum education studies that pertains to some of the more fundamental elements of visitor engagement in museums (Herr-Stephenson, 2011; Rudman et al., 2008; Tallon & Walker 2008; Wells et al., 2013). Participant engagement of didactic content in the form of portable ELCs increased based on spatial placement within the Mission museum setting. This data suggests a fundamental and functional relationship between informative didactic content placement, museum exhibitory and visitor engagement.
In conclusion, this research offers museum educators insights for developing effective placement and delivery of didactic content in the California Mission museums. Additionally, this data set offers museum educators a basis for potentially several subsequent studies relating to visitor engagement of didactic content and virtual educational resources. Understanding the observable orientations and tendencies of Mission museum visitors is vital to the implementation of future virtual educational resources that concern these historic Mission sites.
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Appendix A

Extended Learning Card:

For More Information About This Display Please Visit: WWW.XYZ.com.
The website content included text and photographs related to the *Vertigo* display.

Noted filmmaker Alfred Hitchcock selected Mission San Juan Bautista as the setting for the 1957 production of the motion picture *Vertigo*—The movie opened in 1958 starring Barbara Bel Geddes, Kim Novak, and Jimmy Stewart. Associate producer Herbert Coleman's daughter suggested the mission to Hitchcock as a potential filming location. The 1940s Hitch was in the middle of several new movie projects and was scouting south of the SF bay area for future location. At the suggestion of one of his producer’s daughters, Hitchcock went to visit the isolated Mission town of San Juan Bautista for a future film dealing with confusion, fear and obsession.

This film which recently knocked Citizen Kane out of first place in “the 10 yearly poll of critical favorites” this movie was of course, the movie *Vertigo*. What some critics feel is the greatest film of all time” Hitchcock, who had a summer home in the area, after seeing the Mission knew he had to found location that could match the intensity of his new lead character Scotty who would be played Jimmy Stewart.

On a warm Sunday afternoon, he arrived in San Juan Bautista. Hitchcock was immediately taken by the Mission Church on the Square with its strange and distinctive bell tower. He returned to his other projects. As in most stories, time passed.
In 1949, the mission fathers realizing the wooden bell tower, originally built in the New England style was in a sad state of disrepair. Their decision was an easy one. Ironically the tower one of the central icon of the movie was originally ever a part of the Spanish Mission Church. Better to tear it down. And so, the soon to be iconic tower, the stuff of Hitchcock’s vision fell into ruble. That could have been the end of our story until fate stepped in late fall 1957.

By this time Hitchcock had assembled his cast and his stars Kim, Jimmy and of course our Mission. When the Hollywood Production team arrived on the Plaza, they searched in vain for the bell tower which was to be the centerpiece of the film. Who would tell Hitchcock, that his tower was gone? But in Hollywood all things are possible so the crew built a tower right on the set in tinsel town. No one would ever know. A matte painting was imposed on the film. And so production began, and our Mission earned its place in Hollywood folklore.

In 1975, Mission conservator Sir Harry Downey perhaps thinking of the film built his own version of a mission bell tower a traditional Campania. That is the tower you see today (Edge, 2015).