Digital Education, Access, and Visitor Engagement in the
Art Museum

Otis Coolidge Chapman Honors Thesis
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Introduction

In 2014, the American Alliance of Museums (AAM) published a report, entitled “Building the Future of Education,” outlining pertinent issues facing museum education in the United States. Central to this discussion is a societal shift towards a new era of education that is shaped by students’ desire for flexible, self-directed, and experiential learning. The AAM’s report suggests that in the coming years students will seek alternative ways of acquiring knowledge that extend beyond brick-and-mortar classrooms. In a separate AAM report focused on envisioning what museums might look like in 2040, one author posited that libraries and museums may take on a new role in this evolving system, offering “micro credentials” to students for specialized skills, among other educational services.

It is no coincidence that this pedagogical transition comes at a time when information technology is changing how we interact with the world around us. Younger generations are experiencing daily life with the expansive knowledge of the Internet at our fingertips, to the point where we rely on the Internet for completing even the most menial of tasks. Scholars are grappling with these realities, trying to predict the societal implications of the proliferation of technology in daily life. In practice, this transition already is significantly impacting the way that all institutions of learning approach education.

As our lives become increasingly digitized, the expectations of museum, library, and archive users are changing. Digital content that might have been considered a bonus ten years

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1 I would like to thank Professor Kriszta Kotsis profusely for directing this thesis project. I would also like to thank Professor Linda Williams for offering insightful comments as my reader. I am indebted to both of them for their assistance. Additionally, I’d like to thank the Richard Bangs Collier Institute of Ethics and Science, the Honors Program, and the Department of Art and Art History for funding this research.
3 Cris Hon Garcia, “From the Leadership,” (MUSEUM, November/December 2017), 29.
4 See Pappano’s August 2, 2018 article in the New York Times, “The iGen Shift: Colleges are Changing to Reach the Next Generation”, for more information about how this shift is shaping higher education.
ago, such as a collections database available to the public via an institutional website, is increasingly perceived by visitors as a given. Art museums are continuously negotiating what digital strategy can (or should) look like at a cultural institution, as they navigate this period of transition. This process is complex, as the integration of new technology in any area of the museum requires major changes in the way the institution operates on a multi-departmental level.

Grappling with these fundamental societal and educational shifts is daunting, as it is unclear how we will cope with these exponentially developing changes. Elizabeth Merritt, the founding director for the Center for the Future of Museums, identifies this paradigm shift as an opportunity, writing,

The disruptive shift between eras is a time of challenge and opportunity: challenges to the existing power structure and to those prospering under the old paradigm; opportunities for new players to emerge and for previously underserved groups to come into their own.

A fundamental shift in the paradigm underlying America’s educational system would rock the foundations of our society, holding out the promise of redressing long-standing inequities that stratify our society and hobble economic mobility.

Right now—this decade—is our window of opportunity to influence the direction we take in coming decades. We need to envision the potential futures that could arise from the ashes of the old era as it flames out, choose the future we want to live in and take action to make it real.⁵

Merritt’s call-to-action is compelling and unmistakably hopeful—which is significant, at a moment when many Americans are dissatisfied with the state of our current education system. According to Merritt, this crucial transitory period is a chance to take concrete steps towards “redressing long-standing inequities that stratify our society.” The educational paradigm shift that Merritt traces is relevant to museums as institutions of learning and as institutions of power. However, as institutions of power, art museums are implicated as perpetuators of inequity in

⁵ Merritt, Building the Future of Education, 10.
society. I am interested in investigating how digital tools impact the function of the art museum as a democratic institution of learning. Using the theoretical framework of French social theorist Pierre Bourdieu, I aim to explore the potential of technology as an education tool in the art museum.

While envisioning the future we would like to inhabit is important, understanding the realities museums face today and potential obstacles they might encounter in pursuing such a future is equally significant. In order to better understand the impacts of technology on museum education practices, I conducted a qualitative survey of seven American art museums in Washington State, Oregon, and California. I was particularly interested in examining the factors that motivated digital integration decisions on the part of each institution. Utilizing an ethnographic lens, I investigated the different kinds of technology art museums employ, as well as the factors that prompted the decision to incorporate these tools. In particular, I focused on interpretive or educational technologies, such as audio guides or interactive touch screen stations, designed to assist visitors in engaging with content. I interviewed various members of staff at each site including museum educators, digital media specialists, and curators. In addition, I collected observations at each site by placing myself in the role of the museum visitor and walking through each gallery to note instances of digital components.

A comparative analysis of the seven museums revealed a diverse number of approaches to digital strategy even amongst similar institutions, with a greater level of digital integration in special exhibitions. This trend is indicative of the economic realities that force museums to selectively choose where they integrate digital content, as the process of producing in-gallery technology is time-consuming, labor-intensive, and costly. The concentration of efforts in special exhibition galleries suggests a hierarchy of digital integration, privileging special exhibitions
over the permanent collection within the physical space of the museum. Although most museums in the study have websites that allow virtual visitors to engage with the permanent collection, the lack of digital interpretive materials for permanent collections in the physical gallery de-emphasizes the importance of these works to visitors who enter the museum without prior knowledge.

While conducting visitor experience research was outside the scope of this project, I suggest that this pattern has the potential to lead to notable differences in access to information, where visitors with less knowledge of art history are disadvantaged, entrenching pre-existing social and educational divisions. Some observations I make suggest the potentially detrimental impacts of certain approaches to implementing of educational technology, but ultimately, I claim that there is reason to be optimistic about the future of digital learning in the art museum. I argue that with an awareness of the Hierarchy of Digital Integration, museum education departments can consciously incorporate digital tools in a way that provides visitors with consistent levels of contextual information throughout the physical museum.

**Methods**

In an attempt to better understand how art museums make decisions about when and where to include educational technology in their galleries, I conducted a qualitative survey of seven art museums on the West Coast of the United States. The goal of this study was to investigate how different kinds of art museums employed technology in their galleries. For example, I was interested to learn how attitudes toward technology might differ between staff, at a smaller university museum versus those at a larger, public museum. Museums in the study were selected on the basis of location, size, and affiliation with other institutions such as universities. In its final stage, the study included:
- The Seattle Art Museum in Seattle, WA.
- The Tacoma Art Museum in Tacoma, WA.
- The Portland Art Museum in Portland, OR.
- The Hallie Ford Museum of Art at Willamette University, in Salem, OR.
- The de Young in San Francisco, CA.
- The San Francisco Museum of Modern Art in San Francisco, CA.
- The Cantor Arts Center at Stanford University in Stanford, CA.

I collected data in three forms: semi-structured interviews, in-gallery observations, and observation of online content.

**Interviews**

Before describing how I conducted my research interviews, I will first briefly describe how I arranged these meetings, as it proved to be a significant process that shaped the study. As this study involved human participants, I created a consent form that explained how this information would be used and presented as part of my senior thesis in art history and the Honors program. This form allowed respondents to select how their information would be identified. They had the option to remain anonymous (in which case responses would not be associated with a particular institution), be identified only by first name, or be identified by their full name.

After receiving Internal Review Board (IRB) approval in March, I began contacting potential respondents via email with an explanation of my project in order to determine whether they might be willing to participate in my study. Some introductions were made via email through my advisor Professor Kriszta Kotsis, as well as the other professors in the Department of
Art History at UPS, Professor Linda Williams and Professor Zaixin Hong. However, even in the cases where I reached out to a member of museum staff through these personal connections, it often took multiple attempts to yield a response from potential candidates. This was particularly true of staff at larger public museums.

The scheduling process was ultimately a nearly four-month long endeavor that continued into the data collection phase of the project. Over the course of this process, changes were made to the project’s IRB status to accommodate those who only wished to provide feedback online. In one case, the only way I was able to get an email address to contact a potential respondent directly was by going to the front desk of the administrative offices and explaining that I was a student only looking to have a conversation for research purposes. In other cases, I used multiple connections, sometimes through other respondents, to facilitate introductions.

The practice of scheduling was an imperfect science as it involved a combination of networking effectively and luck in finding overlapping schedule availabilities. It revealed tangible barriers to at least one type of access in the museum—access to the staff that shapes and realizes the material found in the galleries. In one instance, I reached out to a university-affiliated art museum through an email address listed on their public website. I received a response from a member of staff informing me that they were unable to comment at this time. This was the only museum I approached that did not offer an opportunity to interview staff or pass along an online survey. This interaction made me wonder if I might have experienced a different outcome if I had reached out directly to a curator, been introduced by a mutual acquaintance, or visited the administrative offices in-person without an appointment. It was disheartening to realize that if I

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6 I offer my sincerest gratitude to Professors Kotsis, Williams, and Hong for their kindness and willingness to facilitate these interviews. This research would not have been possible without them.
had not had the connections to these institutions via my professors and their professional networks that this research likely would not have been possible.

Despite these challenges, I was able to speak with members of staff at every institution selected except for the one mentioned above. Typically, once I was able to make the initial connection at an institution, my contact would put me in touch with other colleagues who might have valuable input. As a result, I spoke to an average of two members of staff at each location, usually from different departments. Respondents were most commonly from curatorial or education departments. In these semi-structured interviews, which typically lasted around 35 minutes, I asked questions intended to help understand both the respondent’s experience with technology in the museum, as well as broader institutional goals related to interpretive technology. Due to the fact that I spoke to respondents in a multitude of roles, I often tailored these conversations to the specific area of expertise of the interviewee. However, in nearly all cases, I asked the following questions:

- What is your role and your associated responsibilities at the museum?
- What kind of technology do you use in your day-to-day operations?
- What kind of public-facing technology have you used in galleries? What kind of technology will I find walking through the exhibition today?
- What practical concerns do you face when rolling out a new technology at the museum?
- Do you believe that there are certain technologies that don’t belong in an art gallery?
• Have you experienced, either at your home institution or another, a piece of interpretive digital technology that you found particularly effective? What was it, and why did you find it effective?

• If you could design an interpretive digital technology without concern for resources or other practicalities, what might it look like?

At the outset of this project, I was interested in public-facing technology more broadly, which is why I asked about “interpretive” technology rather than educational technology. I use the term interpretive technology to refer to any digital experience that enriches a visitor’s experience. It was through the data collection process that I narrowed my focus, because nearly all visitor-facing technology I experienced was education-related. I found that terminology surrounding visitor-facing technology differed greatly from institution to institution, but that respondents understood what I meant when I referred to interpretive content. I supplemented these questions with inquiries about particular programs, exhibitions, and tools that I had found in my research of the museum prior to the interview.

Observations

Given that all interviews in the study were conducted on-site at each institution, I had the opportunity to walk through the galleries at each location. Sometimes I would walk-through the museum following an interview, in which case I might have specific areas in mind that the respondent had mentioned. My aim was to experience digital interpretive materials as a visitor of the museum. Additionally, this provided the opportunity to informally observe how other visitors interacted with these technologies. I’d work through each gallery and photograph technologies of interest. I also downloaded any mobile applications I found related to the institution, particularly when these platforms were advertised as specifically designed to be used in the galleries.
Although I didn’t have any precise metrics to measure visitor engagement or responses, I took notes on overall trends and patterns that I noticed. Collecting observational data onsite helped illuminate the financial cost of attending these museums, including the price of general admission, special exhibitions, audio guides, and more, as I took on the role of the visitor.

Online Content

Every museum in the study had a website that provided information for virtual visitors. I examined each site for interpretive materials, taking note of whether this content was meant to be used in conjunction with a visit to the physical museum or whether it could be used as a stand-alone feature. Additionally, as previously mentioned, I downloaded any smartphone application related to each museum. This data is significant because it can be used as evidence of a larger digital strategy, as well as a way to compare the digital integration found in the physical gallery. I was interested to observe how content available online might play off of or work in conjunction with content in the museum.

Results: A Spectrum of Digital Strategy

The data collected in this study revealed that while there were similarities in their approaches, each museum had an individualized style of digital strategy; there was no discernable typology of approaches that would allow these institutions to be placed into categories. Instead, it is more productive to conceptualize these museums as existing on a spectrum of digital integration, with one end describing an institution with no digital interpretive material and the other pertaining to an institution that utilizes digital interpretive technology inside and outside of the gallery, as well as online. An institution’s position on the spectrum may shift depending on whether one is strictly considering special exhibitions or their collections as a whole.
The Hallie Ford Museum of Art (HFMA) at Willamette University is an example of a museum on the lighter end of the integration spectrum. Established in 1998, this university-affiliated institution welcomes approximately 30,000 visitors annually. As HFMA is a smaller museum, Curator of Education Elizabeth Garrison and Chief Curator Jonathan Bucci each stressed how limited staff and square footage are both factors in the feasibility of incorporating technology in galleries. At the time of my visit, a handful of permanent collection objects featured QR codes that allow visitors to use their smartphones to scan for additional information (Appendix A:3). QR codes, an abbreviation of Quick Response Codes, are machine-readable blocks of black and white squares that, when scanned with a smartphone, direct a user to a particular website or set of information.

Bucci explained that QR codes were a good solution for their galleries because they had a “low-impact” on museum resources and had minimal upkeep. Garrison elaborated further on possible future directions of the museum’s digital strategy, saying, “I’d like to do more interactive activities online...but I’m afraid if we did that in the gallery that’s all that would be experienced. So, it’s a balance.” This observation indicates how although practical limitations influence how they use digital components in the gallery at HFMA, ideological concerns about the relationship between technology and the art object factor into educational goals as an institution.

On the heavier end of the digital integration spectrum, the San Francisco Museum of Modern Art (SFMOMA) features digital interpretive media on multiple platforms in exhibits

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8 Elizabeth Garrison and Jonathan Bucci, in conversation with the author, June 2018.
10 Ibid.
11 Ibid.
throughout the gallery. Content is available via story screens mounted to the walls, interactive touch screens, audio wands, and the museum’s app featuring free audio guides, among other resources (See Appendix A:4 and A:5 for images from inside the galleries). It is worth noting that any comparison of HFMA and SFMOMA that does not mention of the difference in resources would be remiss—SFMOMA was established in 1935, hosts over a million visitors each year, and recently finished a $250 million expansion of their galleries. However, this resource discrepancy is not the only factor at play; ideological differences about how the role of technology in the art museum and the way that it changes museum experiences influence the position of these institutions on the spectrum of digital integration.

**Results: Patterns in Platforms, Formats and Devices**

While there were a variety of immersive experiences and types of digital content available across the seven museums in the study, there were certain formats, platforms, and devices that were present at most sites. In this section, I’ll describe the three most common tools that I found.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Location</th>
<th>Video</th>
<th>Audio Guide</th>
<th>Touch Screen</th>
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<tbody>
<tr>
<td>Seattle Art Museum</td>
<td>Seattle, WA</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tacoma Art Museum</td>
<td>Tacoma, WA</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Portland Art Museum</td>
<td>Portland, OR</td>
<td>X</td>
<td>X</td>
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<table>
<thead>
<tr>
<th>Museum of Art</th>
<th>Location</th>
<th>X</th>
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<th>X</th>
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<tbody>
<tr>
<td>Hallie Ford Museum of Art</td>
<td>Salem, OR</td>
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</tr>
<tr>
<td>SFMOMA</td>
<td>San Francisco, CA</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>The de Young</td>
<td>San Francisco, CA</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Cantor Arts Center</td>
<td>Stanford, CA</td>
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Figure 1: This table summarizes which of the most common digital formats I found at each location.

By far, the most universally lauded and utilized format of digital content was video. There were differences in how videos were presented to visitors, (i.e., in-gallery versus out of gallery, on personal mobile devices versus projected onto a wall for communal viewing, etc.) but multiple interview respondents commented on how useful and popular video was as a way to convey information. Of the seven museums in this study, all but one included video in the gallery at the time of my visit. At the institutions that did have video available at the time of my visit, I often found it in multiple locations throughout the museum, serving different functions by conveying different types of information.

At the Cantor Arts Center at Stanford University, video is an essential component of the museum’s permanent exhibit on Rodin. The museum houses the largest collection of Rodin sculptures outside of France. Kim Mansfield, the Cantor’s Manager of Public Programs, explained that the lost wax casting process Rodin used is “incredibly complicated, [and to start to

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grasp it,] you need to watch the video three or four times.” The video is presented to visitors on a wall-mounted screen in the Rodin gallery, next to a label detailing each step further (Appendix A:6). In this case, video is used to provide information about an artistic technique that is best understood with the help of a visual aid.

Another way video is often utilized is to bring in the artist’s voice into the gallery. At the Portland Art Museum, the temporary exhibition Interwoven Radiance features Chilkat and Ravenstail weavings made by women artists from the Northwest coast. The weavings themselves are supplemented with videos of the artists describing their process and the significance of this practice to their culture. A description of the exhibit written by Lily Hope, a Tlingit artist and weaver, outlines the aim of the show as “striv[ing] to elevate the mastery and ingenuity of women artists of the Northwest coast.” By including the faces and voices of these women in the gallery, visitors have a tangible sense of context of these works, as well as the importance of these weavings in their respective cultures. Interview respondents at multiple museums noted that videos of the artist are particularly popular with visitors, so they try to incorporate them whenever possible.

Audio guides are another popular interpretive technology format found at the museums in this study. At the Fine Arts Museums of San Francisco (FAMSF), a respondent discussed a recently unveiled audio guide available for objects at both the de Young and the Legion of Honor. Designed for people with limited time to view the collection, the audio guide features highlights of both museums and is offered in five languages. The respondent explained that audio guides are beneficial because they offer visitors a way “to engage and hear the voice of the

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14 Ibid.
15 Portland Art Museum, Museum Label for Interwoven Radiance
16 Ibid.
curators. The FAMSF utilize audio wands that visitors can rent as a platform for their guides, but visitors can additionally listen to select portions of the guides online for free in Digital Stories, an online source of supplemental content produced by the museums. The respondent did note that Digital Stories are meant to be experience prior to or following a visit to the museum. Because of this, if visitors want to hear the portions of the audio guide that are available for free, they must plan accordingly to go online before they visit, if they’d like to have that context in mind while interacting with the art.

At SFMOMA, visitors can either pay to rent an audio wand or listen to the guide via a smartphone application for free. Nate Blanchard, an adjunct educator, and Jesse Rocha, the administrative assistant to IT and Operations departments, discussed why audio guides are so valuable:

Jesse: I really like the audio guides, we’ve kind of done it here where we’ve minimized the amount of wall labels we have, because if there are too many you forget to look at the object. You kind of lose the connection between the piece, what you just learned about it, and what you see about the piece.

[...]

Nate: I think [audio guides] are very important...it’s one of most accessible ways to explain things to people who are not art-literate.

Audio guides function in a way that is similar to a tour guide or docent by providing information that, as Blanchard noted, helps explain ideas to those who are not “art-literate”. Additionally, respondents mentioned a concern for preserving the visitors’ uninterrupted interaction with the art object. The audio guide presents an opportunity for visitors to learn additional information by listening, which allows them to focus on looking at the object in front of them. This is similar to the way that a student of art history might learn about a painting in a lecture hall, listening to the

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17 Emily, in conversation with the author, July 2018.
18 Nate Blanchard and Jesse Rocha, in conversation with the author, July 2018.
professor speak while looking at an image projected on the screen. While there are some benefits to a docent tour or lecture that audio guides do not offer, such as the ability to ask questions, there are some certain unique opportunities that the audio guide can provide. For example, there is the potential for visitors to stop and start the audio guide as they choose, only focusing on the pieces or areas of the museum that are of most interest to them.

Due to the large number of visitors SFMOMA welcomes daily, like many large institutions, special exhibition tickets are offered with entrance times, in order to manage the flow of people through the limited space in the special galleries. When I visited, the museum was featuring the work of French Surrealist René Magritte. Although I was at the museum in the middle of the day on a weekday and entrances were timed, there were many people walking through the exhibition with me. The vast majority of visitors used headphones and their own smartphones to listen to audio guide content for free. While there were also written labels describing the works and major themes, due to the large number of people it was difficult to navigate the room and get close enough to read the text. I saw more than one person be asked by museum staff to step back from the art because they were too close, and each time the person apologized and explained they were trying to get close enough to read the small print of the wall label. This experience helped illuminate another reason why audio guides are so popular, particularly with high-traffic museums and other cultural heritage sites, in the way that they eliminate the need for groups of people to crowd around a single wall label.

Touch screen interfaces are another tool that I found at most museums in the study. Of the three formats described in this section, these interactive tools are by far the most versatile and allow for the most customization on the part of the museum. Many museums used touch screen tablets as a way to add videos or additional text in the gallery. Others used larger panels affixed
to the wall to point out specific features of a work, a movement, or a particular artist. There was also a great degree of variation in how this content was generated. I found that it was typical for museums, particularly larger institutions, to contract out the design of these interfaces to software engineering firms rather than undertaking the resource-intensive process of developing the content in-house.

At the Hallie Ford Museum of Art, staff utilized touch screen tablets as a way for visitors to interact with a 17th century illustrated Bible for the 2017 exhibition *Holy Beauty*. Jonathan Bucci, Chief Curator, described how the tablets provided a good way for visitors to interact with the object digitally, since the show was centered around one object that had to remain in a case for preservation purposes:

Jonathan: If it was just the Bible—static—you can’t flip the pages because it’s under a case. It would not have had the same impact. The way the animation worked, the animation made it look like the page turned, it gave people the feeling of looking through the book.

In the book, the engravings were inserted vertically, but they were horizontally formatted, so on the side screens, we had them formatted so you could properly see them...And then when you flip the page you can see the back of the page and see the ink bleed through. So, you really got a feel for... the paper and everything.19

In this setting, touch screens help aid the preservation of the object. Both Bucci and HFMA’s museum educator, Elizabeth Garrison, stressed that this use of a digital feature felt appropriate in this context, because it enhanced the visitor’s experience rather than taking away from their interaction with the object.20 Jonathan suggested that it would have been a different story if the exhibit had been centered on a painting, because in that context the touch screens would have forced the painting to compete for the visitor’s attention, rather than being the default focus.

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20 Elizabeth Garrison, in conversation with the author, June 2018.
At the Seattle Art Museum, in-gallery touch screen interfaces allow visitors to watch videos, read articles, and view images related to the exhibit. Tasia Endo, Manager of Interpretive Media, explained that they make a concentrated effort to have stations available throughout the galleries for visitors to view content from the museum’s mobile applications, because they are aware that not everyone comes to the museum with these devices (See Appendix A:7 for an image of these stations). Tasia noted that these types of interactive features are important for visitor engagement because research done by the museum has shown that visitors frequent exhibits with these tools more often and for longer periods of time than exhibits without them, signaling a deeper level of engagement with the material.\(^\text{21}\) These stations also allow visitors to select the type of material they are most interested in, letting them focus on the aspects of the work that they find most fascinating. Even more so than the audio guide, touch screens invite the user to control their experience by inviting physical interactions that dictate what information they are shown.

**Results: Digital Integration and Internal Dynamics**

As described in the Methods section, the process of setting up interviews at the museums in the study revealed notable internal dynamics. Initially, this study’s target respondent demographic were curators rather than museum educators. However, on more than one occasion, curators would defer questions and suggest meeting with members of the education or marketing team. In one exchange, a curator suggested that their institution did not use any kind of digital technology in the galleries and for that reason they could not answer any questions about digital strategy. A museum educator at the same institution was CC’d on the email and quickly jumped

\(^{21}\) Tasia Endo, in conversation with the author, July 2018.
in to clarify that the institution did in fact utilize digital technologies and that they would be open to meet and discuss the topic further.

This interaction suggests a disconnect between how these two departments conceive of their identities and their aims. On the one hand, the curator did not believe that their work involved digital media. On the other, the museum educator re-affirmed that it did. While this is a specific example, it speaks to a larger trend of how introducing technology in the gallery displaces some of the curator's control over exhibition design. While I hesitate to categorize this shift in power as the death of the curator, this trend is certainly indicative of how the curator's role is shifting in response to how the art museum is changing as it confronts digitization.22 Education teams are often guided by overarching goals that have been set in collaboration with departmental directors.

For example, at FAMSF, a Digital Education Project Manager spoke to how the efforts of their department were part of a larger initiative that was set in place by the museums' former director, Max Hollein. The de Young's primary digital interpretive materials are called Digital Stories and are located on their website (Appendix A:1). Per a description online, "Digital Stories are a series of free, in-depth looks into our exhibitions, enriched with multimedia experiences. Learn more about an exhibition's cultural context and artworks before you visit and discover details about the works that might otherwise go unnoticed."23 Thus, Digital Stories provide an additional layer of contextual information that is particularly in pointing out aspects of the art that might not be immediately apparent to those who are not art-literate.

22 For more discussion on the shifting position of the curator, see Sabeth Buchmann’s “Curating With/In the System,” in OnCurating, Issue 26, October 2015.
23 “Digital Stories”, the de Young, at https://deyoung.famsf.org/digital-stories
The decision to digitally integrate the works in this way, the respondent described, was the result of the success Hollein had found with the project at his previous institution, the Städel Museum in Frankfurt, Germany:

"[Digital Stories] were definitely something that the director, Max Hollein…first brought with him when he came. They actually did them in Frankfurt, at the museums where he previously worked, and they were just very successful and popular. I think it was something like 40% of people who visit the Städel also looked at the Digital Stories… it’s definitely a way to get information about the special exhibitions out to people who were going to come to the museum or even people who couldn’t but who are interested from afar."24

In the case of Digital Stories, the choice to include these additional resources was not made solely by curators. While it’s likely that curators welcomed the additional context and information that Digital Stories are able to provide, it is significant that this decision was the product of a discussion that spanned all levels of the museum’s leadership. This pattern of incorporating a greater number of contributors to exhibition design was present at other institutions as well, as media specialists or external consultants were often brought in to add interpretive technology to supplement written materials for special exhibitions.

Related to this shifting position of curatorial influence is the inter-departmental nature of incorporating new technology. With Digital Stories, the respondent pointed out that the project brought members of many different departments into conversation with one another in order to generate the content.25 Software engineers, marketing specialists, museum educators, and curators all contribute to create an end result that includes scholarly information, interactive graphics, and multimedia components (See Appendix A:2 for a close up the Digital Story for the special exhibition Cult of the Machine). This sentiment about the importance of

24 Emily, in conversation with the author, July 2018
25 Ibid.
interdepartmental collaboration was echoed during many interviews including those at the Portland Art Museum and the Tacoma Art Museum.

**Results: Common Barriers to Digitization**

While much of this study is devoted to looking at the technologies utilized by various art museums and attempting to understand why these tools have been selected, it is similarly important to recognize tools that are *not* present in galleries or online and try to understand the reasons museums choose not to include certain technologies in the gallery. In this section, I will examine the limiting factors that all museums in this study were forced to contend with in one way or another.

It is worth reiterating the different contexts in which these different museums are working. Some institutions were affiliated with universities and as a result did not rely as heavily on admissions as a stream of income. This meant that staff had more freedom to design galleries and exhibitions in the way that they felt would best serve their community, rather than the design that would garner the most ticket sales. Some institutions in the study are large museums with extensive legacies and sizable endowments. For these museums, financial resources for developing new technology were more readily available. As a result, the extent to which the limitations discussed in this section impacted institutions varied considerably.

At multiple institutions, respondents repeatedly mentioned the great expense required to produce an audio guide. Despite the popularity of this format of interpretive content, the prohibitive cost limits the number of objects or number of exhibits for which certain institutions could provide audio integration. At some museums, such as the de Young, the production expense is transferred to the visitor in the form of a rental fee for audio wands. There are benefits and drawbacks to this strategy; the benefit being that the museum is able to produce multiple
different kinds of audio guides, but by passing down the cost to the visitor, they potentially restrict access to this content for those who cannot pay an extra $8 on top of the $29 visitors pay for general admission on the weekends.

At other museums, such as the Tacoma Art Museum, the cost of producing audio content is managed by using third-party apps such as QStory, which visitors access on their own mobile devices. This helps to avoid the cost of maintaining and cleaning the audio wand apparatus, which Chief Curator Rock Hushka notes is just one of many logistical considerations that museums must consider when incorporating new technologies.26 However, there are drawbacks to this approach as well, as an off the shelf app such as QStory allows for less customization than if they were to produce the guide themselves. It also prevents those without smartphones from being able to listen to the audio guide.

Questions of who will maintain new technologies came up frequently at institutions with smaller staffs, where museum personnel often already have multifaceted roles that encompass multiple areas of content development and curation. At the HFMA, Jonathon Bucci mentioned that at an institution like theirs, the addition of new technology would mean that someone would have to take on additional responsibilities on top of their regular tasks.27 The amount of time it takes to incorporate new technologies, from deciding which platform to utilize, to troubleshooting installation and set-up, limits what technology museums are able to incorporate. It also underscores the need for intuitive software that is designed with the needs of the museum staff in mind.

Apart from the large amount of time and financial capital involved with incorporating new technologies, there are also aspects of the physical gallery space that museums must

26 Rock Hushka, in conversation with the author, June 2018
27 Jonathan Bucci, in conversation with the author, June 2018
consider when adding digital features to the gallery. The building that previously housed the Seattle Asian Art Museum, which is currently under renovation, was historic and had low ceilings. This feature, which may seem somewhat inconsequential, actually had a significant impact on both the types of work that could be exhibited as well as the size of screens and the incorporation of video in the galleries. Xiaojin Wu, curator of Japanese and Korean art, noted that they avoided large installations or technology that might overwhelm the visitor in the smaller space.28

Another consideration is whether or not a WiFi connection is available throughout a museum. If an exhibit has an accompanying mobile application, a lack of WiFi could limit access to that content or prevent the visitor from downloading the app in the first place. In some situations, static interactive touch screen stations might also need to connect to the internet to function properly. If a museum is particularly expansive, is partially underground, or has other architectural aspects that make it difficult to provide WiFi throughout, the financial cost of connectivity increases.

Results: The Hierarchy of Digital Integration

As mentioned previously, there were many differences in how each museum in the study approached the use of digital technology in the gallery. However, one discernable pattern across all museums was that a greater number of digital tools featured in special exhibition galleries. Unlike galleries that display objects from the museum’s permanent collection, special exhibition galleries largely feature objects that are temporarily brought to the museum for a particular show. To gain entry to the special exhibition, visitors typically must purchase an additional ticket on top of the price of general admission to the museum. Special exhibitions often drive revenue and

28 Xiaojin Wu, in conversation with the author, July 2018.
foot-traffic to the museum. For example, at London’s National Portrait Gallery (NPG), nearly half of all visitors report attending the museum with the explicit purpose of viewing a particular blockbuster show.\textsuperscript{29} In the case of the NPG, annual attendance numbers have been higher during years where they have more than one special exhibition over the course of the calendar year.

As a result of the key role special exhibitions play in driving revenue, these shows are often the focal points of promotional efforts and are heavily advertised. I witnessed the heavy advertisement of special exhibitions during my fieldwork, especially in the Bay Area. In the airport, along busy roads, and on billboards, I saw promotional materials for the de Young’s \textit{Cult of the Machine} and SFMOMA’s \textit{Rene Magritte}. In many of these advertisements, content related to the special exhibition took center stage, while the name of the museum or logistical information like the dates of the show were often omitted.

With limiting factors I discussed in mind, perhaps it makes sense that museums would dedicate their finite resources to developing interpretive technology for special exhibitions. If special exhibitions increase attendance, including their most cutting-edge technologies in these galleries might be a strategy to make these shows more appealing. This tendency towards incorporating more digital technology in special exhibitions contributes to what I’ve termed the hierarchy of digital integration. I use the term hierarchy because, based on observations in the galleries of the museums in the study, it would appear when deciding where to incorporate digital technology, certain spaces in the physical museum are prioritized over others.

From the discussions I had with museum staff during research interviews, it would appear that this concentration is not the result of the belief that these technologies are somehow more

\textsuperscript{29} Martin Bailey, “Why the Number of Visitors to Two of London’s Major Museums has Plunged”, \textit{The Art Newspaper}, March 1, 2018 at https://www.theartnewspaper.com/news/why-the-number-of-visitors-to-two-of-london-s-major-museums-has-plunged
effective in special exhibitions than in permanent exhibitions, but rather, it is a by-product of the significance of the special exhibition. It is also important to note that this concentration was never explicitly referenced by any respondents. The only time that the distinction between technology in permanent versus temporary galleries came up was with regard to cost effectiveness. In some interviews, particularly at smaller institutions, respondents noted that given their limited resources, developing educational technology for permanent objects made the most sense because they could continue to use the tools in the future. However, even at institutions where respondents acknowledged that it might be more efficient to invest in digitally integrating permanent objects, the vast majority of prior and current digital integration efforts were focused on special exhibitions.

In some instances, special exhibitions objects were privileged in the physical gallery space, but online, museums offered similar levels of interpretive materials for permanent and special exhibitions objects. Virtual visitors have access to a plethora of essays, artists' statements, videos and other multimedia materials that give important contextual information about art objects. Providing information online also allows those who are limited in their ability to visit the physical museum to still engage with and learn about art. However, when online supplementary information is designed to replace in-gallery contextual tools, I argue that there are unanticipated impacts on visitor engagement and access.

I see the Hierarchy of Digital Integration as a relevant factor in visitor engagement because the digital tools I found were used as platforms to convey contextual information about the art. It is this information, which includes things like artist biographies, iconographic analysis, and historical details, that help make works of art accessible for visitors who are not art literate. To clarify, providing this information digitally in and of itself is not a bad thing. Rather, within
the physical museum, I see the trend of offering contextual information on digital platforms and restricting the availability of those platforms as potentially detrimental. This is a notion that I will return to in my analysis section.

Although I have highlighted some of differences between these museums, including their location, size, or educational strategy, the common challenges they each face with digital integration and the hierarchy of digital integration indicate their shared history and collective identity as American art museums. In order to further contextualize my findings and their implications for museum education and accessibility, I will present a theoretical framework I find useful in connecting my ideas. Additionally, I will provide a brief overview of the evolution of the American art museum and viewership in art museums, before offering analysis of my findings and the initial conclusions of this study.

**Theoretical Framework: Bourdie and Art Literacy**

To attempt to understand the complex factors that shape the function of the American art museum as a democratic institution of learning, I will draw on the theories of Pierre Bourdie. Bourdie’s theories are useful in the realm of art education because of the ways they can explicate the social factors that shape the way educators and visitors interact with art. Three of Bourdie’s concepts that are particularly relevant to my discussion are habitus, cultural capital, and fields. Here, I will offer brief definitions of each with particular attention to the way they relate to education and art literacy.

According to Oxford Reference, habitus is “an embodied socialized tendency or disposition to act, think, or feel in a particular way.” Habitus, is instilled within us by family,
class, and ethnicity, makes us respond to culturally-specific situations and contexts in different ways.\textsuperscript{32} Education, then, serves to reinforce the habitus groundwork set in place by the aforementioned factors.\textsuperscript{33} Habitus is part of what influences the approaches that museum educators take to teaching visitors about art. It is important to note that the notion of habitus is not deterministic. As Mills argues, it is very much possible to be aware of one’s own habitus and still work independently within this context.\textsuperscript{34}

Habitus shapes cultural capital, which, for Bourdieu, refers to an individual’s knowledge of and lexicon related to particular social practices, such as discourse surrounding visual art.\textsuperscript{35} For example, cultural capital is the information that an art historian draws upon to analyze the significance of a work of art, such as knowledge of common visual motifs from a particular region. Bourdieu describes cultural capital as the “code” that is necessary to understand the underlying “meaning and interest” of a work of art.\textsuperscript{36} Terreni explicates how cultural capital is vital to an individual’s museum literacy—without knowledge of the “code” visitors will not be able to access the same meanings as those who are enculturated to understand art.\textsuperscript{37} According to Bourdieu, not everyone is afforded the same opportunities to absorb cultural capital. Notably, those from the higher strata of socio-economic classes are privileged with more opportunities to gain cultural capital from family, which in turn leaves them better able to receive cultural capital from schools and other educational institutions. Individuals from less privileged socio-economic classes are doubly disadvantaged, because they receive less cultural capital from family, which makes it more difficult to gain cultural capital from other sources.

\textsuperscript{32} Terreni, “It’s a Matter of Distinction,” 5
\textsuperscript{33} Pierre Bourdieu, 1972, cited in Terreni, 5
\textsuperscript{34} Terreni, 5
\textsuperscript{35} Ibid.
\textsuperscript{36} Pierre Bourdieu, Distinction: A social critique of the judgement of taste, 1984, cited in Terreni, 2
\textsuperscript{37} Terreni, 5
In addition to considering habitus and cultural capital in the art museum, it is also beneficial to consider Bourdieu’s theory of fields. Terreni defines a field as “a social space where individuals are located.”

Art museums fall broadly within the field of art, and we can also conceive of museums as made up of fields themselves, including the field of commerce, the field of education, and the field of power. Terreni notes, “the spatial arrangements in an art museum or gallery, and how exhibitions are curated are determined by those in the field of power,” which in turn influences the material that museum educators have to work with. Decisions made by museum directors that have profound effects upon the way educators are able approach content. However, as Grenfell and Hardy point out, “the field position of any museum is determined in part by its own history,” so it is necessary to turn our attention towards the historical factors that have shaped the educational function of American art museums in unique ways.

**Historical Context: The Evolution of the American Art Museum**

As Carol Duncan’s makes clear in her discussion of the art museum as a ritual site, many aspects of the American art museum can be traced back to its European predecessors. I will draw on two examples Duncan presents to demonstrate the ways in which the art museum served unique ideological purposes for the elite in early American society. In her book, *Civilizing Rituals: Inside Public Art Museums*, Duncan analyzes the transitions of the Louvre Museum in Paris and the National Gallery in London from privately held collections to public institutions. In each instance, these transitions were motivated by the political needs of the state. Describing the pair as “monuments to [each] bourgeois state as it was emerging in the age of democratic

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38 Ibid., 6
39 Lisa Terreni, “I know what that is! It’s modern art!” Early childhood access to and use of art museums and galleries in Aotearoa New Zealand, Dissertation, 2013, 185
40 Grenfell and Hardy, 85
revolutions,” Duncan traces how these institutions became hallmarks of “civilized” Western society.\(^{41}\)

The public art museum grew out of the tradition of princely galleries where royalty showcased collections of fine art in order to impress visitors. By associating themselves with art objects, these powerful figures were able to legitimize their rule and present an idealized version of the state.\(^{42}\) Art objects were able to communicate these positive messages not only because of the wealth and cultural refinement that they symbolized, but also because of the moral values associated with aesthetic objects. As Kant articulates in his 1790 work, *The Critique of Judgement*, luxuries, including aesthetic art objects, were key to individual moral development.\(^{43}\) This was especially important from the perspective of political figures, because in a Kantian worldview, individual moral development was the only means by which society could resolve the challenges it faced. By possessing material culture that signified moral superiority, monarchs were able to demonstrate societal progress within their state.\(^{44}\) These symbolic values of aesthetic objects laid the foundation of the status of the art object we contend with today. Art objects were not considered merely beautiful—they are laden with power and the potential to enact individual and social change.

In many European countries, the first public art museums housed objects that formally belonged to these royal collections. In the case of the Louvre, this nationalization of royal art followed the French Revolution, underscoring the republican nature of the new state.\(^{45}\) The museum provided an opportunity for patrons to absorb what Bourdieu refers to as the objectified

\(^{42}\) Duncan, 22.
\(^{43}\) Bradley Murray, *The Possibility of Culture: Pleasure and Moral Development in Kant’s Aesthetics*, (Wiley: 2015), 15
\(^{44}\) Murray, 15.
\(^{45}\) Ibid.
form of cultural capital, which is contained in objects such as art, books, or instruments.\textsuperscript{46} Inherent in the Louvre’s founding, as well as other similar museums, was a message from the state regarding a commitment to equality—that every citizen should be able to access these objects and the cultural capital they imbue.\textsuperscript{47} Duncan indicates that this presumed equality did not translate to intellectual access, writing,

\begin{quote}

equality to access of the museum in no way gave everyone the relevant education to understand the works of art inside...everyone was equal in principle, and if the uneducated could not use the cultural goods that the museum proffered, they could (and still can) be awed by the sheer magnitude of treasure.\textsuperscript{48}
\end{quote}

Here, Duncan pinpoints a difference between the true equality championed by the state and the kind of equality experienced by museum visitors, particularly for the visitors that were equal only “in principle”. From a Bourdieusian perspective, while all visitors had access to the objectified form of cultural capital within art, not everyone possessed the \textit{embodied} cultural capital that was essential to understanding the meaning of it. Each visitor’s habitus affected the way they approached art and understood themselves in the context of the museum space. In her discussion of the way the public art museum was installed in America in the 19\textsuperscript{th} century, Duncan further demonstrates the growing tensions between the function of institution as legitimizing civilized society and the equality of access that, by design, was at its core.

The public art museum model was extremely attractive to Americans for what it symbolized—democratic education, national unity, and, most importantly, the elevation of American society, such that it was comparable to the cultural sophistication of its European counterparts.\textsuperscript{49} Duncan notes that efforts to open public art museums in America were

\textsuperscript{46} Stephanie Claussen and Jonathon Osborne, “Bourdieu’s Notion of Cultural Capital and Its Implications for the Science Curriculum,” \textit{Science Education}, (Wiley: December 2012), 62.
\textsuperscript{47} Duncan, 24.
\textsuperscript{48} Ibid.
\textsuperscript{49} Duncan, 54
spearheaded by wealthy Americans seeking to prove the civilized nature of their young nation.\textsuperscript{50} Public art museums accomplished this goal while simultaneously promoting the education for all Americans. With no royal collections to poach from, American millionaires imported art from Europe to fill grand, newly constructed buildings, and thus the public American art museum was born.\textsuperscript{51}

Despite outwardly expressed commitments to education and bettering American society, the motivations of the elite were not entirely altruistic. As Duncan notes, American bankers and business tycoons reaped benefits from their positions as the founders of museums in large part from their possession and control of a large number of valuable art objects. Their position in this system, including the European connections that provided art for purchase, legitimized them economically and politically.\textsuperscript{52} Apart from gaining social status from their proximity to the museum and elevating the culture of their respective cities, elite Americans could use the institutions as an implement to reinforce class boundaries.

Because of their active role in the creation of these institutions, the founding members of American art museums had control over the kind of art that was shown. With this power, these elites, the majority of whom were WASPs, were able to institutionalize western European culture as American high culture. By fixing the products of their own culture as the aesthetic ideal, the wealthy elite underlined their power, all under the guise of disseminating the moral, spiritual, and educational value of art to the masses.\textsuperscript{53} This served a special purpose that was unique to America—dealing with an increasing immigrant population. The inclusion of immigrants in

\textsuperscript{50} Ibid.
\textsuperscript{51} Ibid., 53
\textsuperscript{52} Duncan, 54.
\textsuperscript{53} Ibid.
society was a cause for anxiety among the elite due to the way they threatened to degrade society by eroding national unity and cultural refinement.

Public art museums served to democratically provide knowledge to individuals seeking to better themselves through exposure to aesthetic objects, while also drawing a distinction between the elite as providers of this cultural capital and citizens as recipients. Duncan writes, “many philanthropic efforts to educate and Americanize the immigrant masses were born as much from fear as goodwill and were aimed at engendering feelings of patriotism and allegiance to established civic authority.”\(^5^4\) Ironically, by identifying themselves as the harbingers of democratic knowledge—an endeavor that theoretically aimed to give everyone access to cultural capital that was vital to their success as citizens and the success of society on the whole—American elites were able to exert cultural control over the masses and make clear the “ideal” art experience.

It is this ideologically complex beginning that continues to shape discourse and practice in American art museums today. In her article “American Art Museums, Sanctuary or Free-For-All?”, Vera L. Zolberg unpacks the complicated relationship that American art museums have with education and public outreach in the modern era. Zolberg describes this relationship as a conflict between elitist and populist tendencies that are innate as a result of the institutional founders and the elite interests they served.\(^5^5\) While populists might view the museum’s primary function as a place of public democratic knowledge, according to Zolberg, elitists perceive the museum as an avenue for the preservation and analysis of a collection of art objects.

Zolberg contextualizes her analysis by examining the role of art as a luxury good and status symbol. Similar to other commodities in a capitalist society, Zolberg points out how

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\(^{5^4}\) Duncan, 56.

\(^{5^5}\) Vera Zolberg, “American Art Museums: Sanctuary or Free-For-All?”, (Oxford University Press: 1984), 379.
American values dictate that in order for our country to be fully democratized, access to fine arts needs to be “[widely] diffused.”⁵⁶ In this sense, art museums inherently are responsible to serve this public educational function, similar to the responsibilities of public libraries and schools.⁵⁷ However, Zolberg identifies a number of factors that complicate the art museum’s ability to serve this function, including the interests of individuals associated with the museum, artists, and trustees.⁵⁸ Through a Bourdieusian lens, Zolberg’s argument could be re-articulated as a conflict between the fields of education and power, with power taking precedence.

Art museums often declare their commitment to attending to the educational needs of the communities they serve, however, Zolberg points out that the percentage of museum budgets dedicated to outreach efforts is often minimal, especially relative to other activities like curatorial practices. Zolberg notes that curatorial departments are often afforded more respect and power in shaping museum policy than education departments. She argues that this imbalance is reflected by the fact that in many cases large amounts of the education department’s work, such as leading tours, is carried out by volunteers rather than salaried employees. In addition, education departments often dedicate much of their efforts to what Zolberg terms “pre-packaged mass education for large groups of school children, [which is] at best superficial.”⁵⁹ Zolberg’s claim suggests that the type of engagement that museums offer to school children does not create the kind of productive experience that other visitors, likely those who possess the pre-requisite cultural capital, enjoy.

According to Zolberg, these discrepancies in power between different areas in the museum highlight a hierarchy of function in the art museum, where the functions that serve the

⁵⁶ Ibid., 380
⁵⁷ Ibid.
⁵⁸ Ibid., 379
⁵⁹ Ibid., 387.
elite are prioritized. In some ways, I see the Hierarchy of Digital Integration as a product of this prioritization of elite interests. The presence of educational technology in the gallery challenges the status of the art object. If the digital tool is what helps a visitor understand the piece of art, I agree that the visitor would begin to focus first on what the digital tool had to offer before engaging with the piece itself—a notion which goes against all of the moral, intellectual, and aesthetic underpinnings of the art object and the value that we receive from experiencing it.

Migrating contextual information to online webpages, and therefore away from the physical museum and the spaces where visitors will engage with art object, eliminates the issue of the art needing to compete for attention. I argue, however, that it compromises the educational function of the museum, because for a visitor lacking the cultural capital to understand a work of art who wishes to learn more through their museum visit, having that information available in the gallery is optimal.

It is important to note, as George E. Hein points out, the relative modernity of museum education as an acknowledged field, only having truly established itself in the U.S. post-World War II. Despite this distinction, he reiterates the fact that American museums have prided themselves as educational institutions from their conception. The field of museum education has evolved over time, to varying amounts of criticism, to encompass a broad range of activities including but not limited to “tour programs; informal gallery learning programs; community, adult and family programs; classes and other public programs; partnerships with other organizations; school programs; and online educational programs.” It is ostensibly through these efforts that art museums aim to provide a level of intellectual accessibility to their

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61 Ibid., 341.
62 Ibid., 344.
collections. Despite these various forms of outreach, art museums continue to be attended by a disproportionately well educated and wealthy subset of the population, as will be discussed shortly. In a sentiment echoing Merritt’s suggestion of the potential to combat inequity through museum practices, Hein notes that in order for a society to progress and challenge the status quo, new methods of education are necessary.63

**Analysis: Viewership and Education in the Art Museum**

In the introduction of *The Responsive Museum: Working with Audiences in the Twenty-First Century*, John Reeve and Vicky Woollard discuss the nuances of terminology related to museum visitors. Certain terms, such as visitor and participant, are more active than others, such as audience.64 In the past, museums were heralded as absolute authorities broadcasting information to audiences.65 Over time, educational theory has shifted towards including visitors and accepting them as dynamic individuals who approach material from different perspectives. This resonates with Bourdieu’s theory of habitus, which characterizes the way a visitor interacts with content as a product (in-part) of their social class.66

In their article “Living in a Learning Society: Museums and Free-Choice Learning,” Falk, Dierking, and Adams outline how the development of our society as a knowledge economy is driving educational theory to become increasingly flexible and tailored to the needs of the individual.67 In a knowledge economy, ideas build upon one another, making learning necessary to comprehend new modes of thought and how they expand upon previous ideas. The existence

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63 Ibid., 349.
65 Hein, 345.
66 Bourdieu, need citation
of the knowledge economy, they argue, has led to an emphasis and increased legitimacy of something called free-choice learning.

By the authors’ definition, free choice learning is “learning that is intrinsically motivated and reflects the learning that individuals do because they want to, rather than because they have to.”

Noting that this is not a new idea in itself, Falk et al. suggest that due to pedagogical shifts and our society’s knowledge economy, free-choice learning will continue to gain prestige and importance as a viable way to approach learning. As individuals spend the majority of their lives outside of the formal education system, museums are key in facilitating free choice learning, even for those who have completed their formal studies.

In addition to the shift in our society towards a knowledge economy, Falk et al. identify another key departure from previous thinking in the transition from a behaviorist-positivist pedagogy towards a constructivist model. According to a behaviorist-positivist outlook, learning is set by the teacher, including what is learned and at what pace. In contrast, a constructivist framework acknowledges the highly individualized nature of learning by allowing the student to structure their learning around their own experiences. Neurological research supports this framework, as studies have demonstrated that the way students learn is not as straightforward or universal as the behaviorist approach suggests. Rather, a constructivist approach to teaching that allows students to create their own personal schemas is more effective in mirroring the neurological learning process.

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68 Ibid.
69 Ibid., 325.
70 Ibid.
71 Ibid., 326.
Falk et al. point out that while this pedagogical shift towards constructivism has been embraced in some contexts, museums continue to structure their educational efforts according to behaviorist ideology. The authors note,

[m]any museum practitioners, consciously or unconsciously, operate as if by properly adjusting the lighting, composing the right label, and positioning an object “just so,” all visitors to the museum will emerge having had the same experience and having learned exactly the same thing.\textsuperscript{72}

Viewing museum education as though it is one size fits all, they argue, is a faulty assumption, as the way a visitor approaches the museum is entirely dependent on a number of factors including prior knowledge, experiences, and motivations. This idea is significant because it suggests that another approach to museum education that allows the student to control the experience, such as free choice learning, might be more effective in providing an engaging experience to a broader range of visitors. And when we look to data regarding who is visiting the art museum, while efforts and successes have been made by museums in engaging a more heterogeneous public, it becomes clear that there is still work left to be done in engaging a broader audience.

It is not difficult to find data that demonstrates a notion that is perhaps unsurprising: that as a whole, visitors to U.S. art museums are disproportionately white, economically privileged, and highly educated. In 2010, Reach Advisors estimated that of the core demographic of museum visitors, only 9% belonged to a minority group. When we consider that the U.S. Census reported that 34% of Americans identified with minority groups in 2010, this statistic becomes even more meaningful in demonstrating the overwhelming whiteness of museums goers.\textsuperscript{73}

In 2012, the National Endowment for the Arts released the latest edition of their Survey of Public Participation in the Arts (SPPA), a periodic national survey of the U.S. designed to

\textsuperscript{72} Ibid., 326.
\textsuperscript{73} U.S. Census 2010.
capture demographic information about cultural activities and their participants. Of those who indicated that they had attended an art museum or gallery at least once in the last twelve months, 35.4% reported a family income of $100K+.\textsuperscript{74} Again, these museum goers belonged to a disproportionately wealthy segment of the population, as only 19.8% of the general public fall within that income bracket. Finally, SPPA data confirmed that over the past decade, level of education has consistently been the strongest indicator of art museum or gallery attendance, with 32.7% of art museum visitors having graduated college. Comparatively, only 18.3% of the U.S. population in 2012 had attained that level of education. If we factor in those with graduate degrees, the percentage of museum visitors with higher education degrees is 56.2%, compared to the only 28.3% of the general population.\textsuperscript{75} These statistics illustrate how the typical art museum visitor is not reflective of diversity of the U.S. as a whole.

As Merritt and Farrell point out, there have been relatively few empirical surveys investigating how minority ethnic and racial groups utilize museums. In order to start to bridge this gap in scholarship, the Center for the Future of Museums released a report on the demographics of museum visitors, with a particular focus on the experience of minority ethnic and racial groups.\textsuperscript{76} One portion of the report focused on collecting ethnographic data from minority visitors about their experiences with museums and cultural heritage spaces in general.

The report collected a focus group of interviewees from the ages of 16 to 25 from different racial, educational, and financial backgrounds. A common theme among interviewees’ experiences was a desire for more interactive activities that gave them power over their experience of the museum. In the authors’ own words, “More than anything else, the focus group


\textsuperscript{75} Ibid.

\textsuperscript{76} Betty Farrell et al., *Demographic Transformation and the Future of Museums*. (AAM, 2010).
participants wanted choice—a choice of activities and exhibits within the museum and choice between museums and other leisure activities outside an institution’s walls.”

This data suggests that this educational shift towards free-choice, experiential learning is reflective of what new generations of potential visitors both expect and desire from the way they relate to the art museum.

An absolutely vital piece of many of the questions I am raising is the issue of how visitors of the museums in my study experienced educational technology at these institutions. At the outset of this project, I decided to limit the scope of my study by focusing on institutional perspectives for the sake of feasibility. However, I would like to build on the quantitative data collected by the NEA and qualitative data from Merritt and Farrell I’ve examined here, in order to offer some hypotheses I have regarding the implications of the Hierarchy of Digital Integration for museum visitors.

**Analysis: Implications of the Hierarchy of Digital Integration**

Understanding patterns in digital education strategy is vital, as, in this realm, digitization is tied to the availability of contextual information. This isn’t to say that digital platforms are the only way that contextual information is provided to visitors, but rather that digital components must work in tandem with other forms of contextual information like wall labels, brochures, and docent tours to create a unified experience. Examining the ways in which all vehicles of contextual information operate together in the art museum is necessary to elucidate the resources that are available to visitors, and by extension the efficacy of the art museum as a democratic site of learning.

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77 Ibid., 23.
In some instances, I saw technology as a compounding factor in limiting visitor access to contextual information. In my view, it is not the digital platforms themselves that are limiting intellectual access, but the strategy of relying solely on digital platforms to provide contextual information, coupled with restrictions in the way visitors can access those platforms. Potential restrictions to accessing these digital platforms include situations where visitors must pay an additional fee to listen to an audio guide or where visitors must buy more expensive special exhibition tickets to gain entry to areas where technology is located. I saw situations where concentrations of technology in certain areas of the museum, like special exhibitions, left other areas, like permanent exhibitions, with less contextual information.

It is extremely important to note that the kind of museum experience I am discussing is just one of many different potential experiences. I am interested in where technology fits in an approach to museum education where art is contextualized through historical details, information about other artists from the period, and iconographic analysis. I see this type of educational approach as most valuable for visitors who don’t already possess the embodied cultural capital they need to de-code the greater significance of the art they see. However, there can be no one-size-fits all approach to museum education or educational technology, because there are so many different ways and contexts in which one can experience art.

Other types of experiences include those such as aesthetic formalist experiences, where visitors are encouraged to carefully observe visual features of the work. When promoting those types of experiences, there is a case for removing technology from the gallery to aid the visitor in having a pure interaction. While I believe that all experiences in the museum are equally valid, I feel that a contextualized approach cultivates the opportunity for equitable learning experiences for all visitors, regardless of prior knowledge. Part of what makes looking at art so wonderful is
its ability to communicate feelings and ideas to a viewer. However, as institutions that are rooted historically in providing a democratic learning environment, I believe that art museums have a certain responsibility to provide contextual information throughout the physical museum for visitors that want it. Educational technology is just one piece in ensuring that consistent level of contextual information.

This conversation about digital strategy is inherently tied to a museum’s overall approach to education and the types of visitor experiences that museum seeks to emphasize. At some institutions, respondents described a move towards minimalist wall labels, emphasizing visitors’ interaction with objects on a formal level—i.e., the color, shape, texture, etc.—rather than readings of an object based on historical or sociological information. These decisions were often motivated by concerns that any type of visual distraction, such as extensive wall text, would interrupt the visitor’s interaction with the art object and de-emphasize that object’s importance.

As mentioned previously, audio guides can provide information without visual distraction, but at institutions where the audio guide is not offered for free, this results in limited access to contextual information. For those that already possess the embodied cultural capital that is necessary to understand works of art, this limitation is less detrimental to their overall experience of the museum. But for visitors who are not art literate and hope to learn more about art by visiting the museum, if they don’t opt to purchase an audio guide, they will lack the resources they need to have a productive educational experience. In this sense, minimalistic approaches to education are associated with privilege, because it is implied that visitors will still be able to understand the art without contextual information being laid out explicitly. Additionally, minimalist approaches prioritize the status of the art object above providing educational materials to visitors. This is one example of Zolberg’s hierarchy of functions in
practice, or in Bourdieusian terms, the field of power within the museum takes precedence over the field of education.

More than one museum in the study offered online interpretive content on their websites for those who were planning to visit the museum, as a way for visitors to brush up on information before setting foot in the museum. In my study, these museums also took a more minimalistic approach to contextual information within the physical museum. While online platforms are useful resources, at some institutions, I found myself missing contextual information in the physical gallery spaces because the majority of the supplementary resources were located online. The galleries where I found this to be especially true were spaces where there were very few printed wall labels or other explanatory material, in addition to a lack of digital interpretive tools. It is important to note here that I am not representative of most museum visitors—as I prepare to graduate with a B.A. in Art History this spring, I possess embodied cultural capital in the form of knowledge of artists, mediums, and periods that helped me interpret the art I saw. And yet, even with this familiarity with art history, I still found myself wanting more specifics while I was actually looking at works in the galleries. For someone with less art education than myself, this impact would be even more significant.

For visitors with available time to decide beforehand which objects or galleries they might like to see during their visit and peruse the museum’s online content related to those areas, this system works well. These visitors are less impacted by minimalist wall labels or fewer digital interpretive features in the galleries, because they received contextual information ahead of time. But, in order to have the foresight to read up about objects of interest online before visiting the museum, visitors must be aware that this method of conveying contextual information. I do not believe that many first-time visitors to art museums would be privy to this
fact; I, for one, was not. Providing the majority of contextual information outside the physical museum is an unspoken rule of how the museum conveys information to its visitors. If we accept my experience of not realizing that I needed to look up information prior to my visit as typical, it follows that these online resources containing important contextual information are largely used by repeat museum visitors who know that such a resource exists.

Recall the statistics observed by the Survey of Public Participation in the Arts that noted the core demographic of art museum visitors are disproportionately white, wealthy, and well-educated, i.e. members of society that are likely to possess a large amount of cultural capital. Thus, first-time visitors, and visitors that might possess less cultural capital than the average museum visitor, might not be aware just from walking through museum that this contextual information is available to them. When we consider visitors with less leisure time to visit these institutions, let alone research specific objects on museum web pages, the drawbacks of a minimalist approach to contextual information in the gallery becomes apparent. Providing contextual information online is better than having no contextual information available period, but I question if the presence of online platforms as the sole vehicle for contextual information is sufficient in meeting the educational needs of all visitors.

While I did observe patterns that might have detrimental effects on visitor engagement, I do believe that there is reason for optimism regarding the use of educational technology in art museums. One of the most popular digital formats, video, was preferred by many respondents for the versatility it afforded. With a video projector and a screen, museums could show visitors content they developed themselves or content developed by other museums. The flexibility in the type of information video could convey was favored by numerous respondents. I think that future
museum education tools should continue to explore how this type of flexibility can create new and engaging experiences for visitors.

I focused on some ways that digital technology contributes to the inconsistency of contextual information that is offered to visitors, but I still think that these platforms are useful as vehicles of this information. In particular, they allow visitors to engage in free-choice learning by letting visitors control the type of audio content they would like to hear, or by letting them select which essay or video they are most interested in via a touch screen. I believe that these types of self-directed learning experiences will offer those who are not art literate a point of entry to experiencing art through a lens that they find fascinating. These are the types of experiences that will help art museums meet the shifting expectations of visitors in the digital age whilst also continuing to broaden museum visitation to include those that do not necessarily possess a large amount of cultural capital.

I claim that the choice to include a digital educational component in certain spaces over others communicates a message to the visitor, perhaps a sign of which art is most interesting or worthy their attention. I also argue that choices surrounding where and how to incorporate contextual information, with or without digital components, are decisions that should be made consciously with a consideration for the ways this will impact visitors from all demographics, particularly those without knowledge of art and art history. In making these conscious decisions, further research in visitor experiences is necessary. I believe future work examining the way technology impacts learning outcomes will be instrumental in this context.

**Conclusion**

Especially as museums continue to work to diversify their visitor base, as a field it is important to continuously ask ourselves how our approach to education is reflective of the
visitors we wish to reach. If we believe free-choice learning is beneficial and productive to
cultivate in the museum, we must consider the various different experiences that shape how
visitors might approach content in the gallery. In particular, we must examine how our practices
may be implicitly ignoring the needs of those outside the core demographic of museum visitors.
Technology, I believe, has the opportunity to contribute positively to free-choice learning
environments, although based on trends I observed during this study, it also has the power to
further entrench educational divisions.

I would like to return to the Elizabeth Merritt’s passage from the introduction, identifying
this educational shift as a potentially major turning point in the way museums approach their role
as an institution of learning. As I described in my results section, I believe that the higher overall
level of digital integration in special exhibitions has significant unintentional impacts on the
learning experience of museum visitors. This is particularly true at institutions that have minimal
contextual information in the gallery to begin with due to a migration of these supplementary
resources to an online platform that is not accessible within the physical gallery. In these
instances, I saw technology compounding the negative impacts of this formalist approach to
museum education practices, in that less information was offered to visitors at the museum
because it was available on the website. Again, I believe that these trends have
disproportionately negative effects for visitors outside of the core demographic of museum
visitors: those without at least some higher education, those without leisure time or awareness of
the necessity to do research prior to their visit, and those without financial means to buy a special
exhibition ticket. I suggest that these visitors also belong to socioeconomic groups that correlate
with possessing less cultural capital with which to leverage in understanding art.
Since collecting quantitative data on museum visitors at the institutions in the study was outside the scope of this project, it is difficult to draw definitive conclusions about exactly who these disproportionately affected visitors are. With national surveys such as the SPPA, we know that race, education, and income are all major contributing factors to the likelihood of a person’s participation in arts activities. Level of education is the strongest indicator of art participation, but we must not ignore the ways in which systemic oppression has created barriers to educational opportunities for certain groups of individuals, such as people of color. If we truly aim to answer Merritt’s call to “redress longstanding inequities” with our museum education practices, it is vital to integrate technology in such a way that is considerate of the needs not only of those who already visit the museum, but those who we hope to welcome into this historically elitist space.
APPENDIX A

1: The home page for Digital Stories, the primary digital interpretive material at the de Young.

Digital Stories

Digital Stories are a series of free, in-depth looks into our collections, enriched with multimedia experiences. Learn more about an exhibition’s cultural context and artworks before you visit and discover details about the works that might otherwise go unnoticed.

Digital Stories have been re-imagined as Insights. A preview of insights is available here. Check back in November 12 for the launch of Gauguin: A Spiritual Journey, and continue to watch this space for extended multimedia content about our special exhibitions and collections.

Digital Story: First Impressions

Digital Story: Cult of the Machine

2: A closer look at the Digital Story for Cult of the Machine, the current special exhibition at the de Young.
3: A QR code at HFMA
4: An interactive digital Story Board at SFMOMA

5: An interactive touch screen that allows users to search for essays related to topics of interest at SFMOMA
Bibliography


Terreni, Lisa. ““I know what that is! It's modern art!” Early childhood access to and use of art museums and galleries in Aotearoa New Zealand,” PhD diss., Victoria University of Wellington, 2017.

