Alternative Voices:

Exploring Museums' Use of Technology-Based Contributory Visitor Experiences

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Abstract

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Technology-based participatory experiences are on the rise in art museums. The purpose of this study was to explore museums' use of technology-based, participatory experiences designed to encourage visitors to contribute interpretive content in art museum exhibitions. Using a case study design, data were collected through interviews with museum professionals at three sites and through document analysis. Study results suggest that museums were primarily motivated by a desire to enhance the visitor experience, keep up to date with technology use, try new things, and offer visitors alternative perspectives to the traditional curatorial voice. Additionally, results suggest that the implementation of these contributory experiences only minimally changed institutions' exhibition development practice and that personnel changes heavily influenced these projects. This study's results point to future research opportunities around what visitors get out of technology-based participatory experiences and offer practitioners examples they can use when planning similar experiences at their own institutions.

Keywords: Participatory experiences, visitor contribution, technology, art museums

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Chapter 1: Introduction

Technology in art museums is a hot topic these days. News outlets including the New York Times, the Wall Street Journal, and the Atlantic are touting the interesting and innovative movements made by museums to incorporate technology (Gamerman, 2014; McDermon, 2016; Meyer, 2015). These popular media sources are spreading the word about a growing trend in museums to think differently about what technology has to offer for enhancing visitor engagement in art museum spaces. They also highlight the potential audience expansion, particularly toward engaging more millennials, in art museums (Cannell, 2015). As art museums look to the future, they are using these new digital technologies to engage the public in museum spaces (Association of Art Museum Directors, 2015).

In the past decade, there has been an intensification of focus on participatory visitor experiences in museums over passive, object-centered experiences (Lila Wallace-Reader's Digest Fund, 2001; Murphy, 2016; Weil, 1999). As the shift in technology presence in museums and the move toward participation-based experiences have occurred, a trend has emerged of using technology to facilitate and encourage visitor participation. This trend has flourished into some truly intriguing projects.

Click! A Crowd-Curated Exhibit, an exhibition at the Brooklyn Art Museum in 2008, was one of the first crowd-curated exhibits that invited the public to contribute and participate in the curation of the exhibit (Bernstein, 2014). The exhibit debuted to significant interest from the public and the press, as well as other museum professionals. The exhibit took as its inspiration James Surowiecki's book *The Wisdom of Crowds* which posited that diverse groups can make better decisions than highly knowledgeable experts. The exhibit engaged the public with this idea

using technology outside the museum and questioned whether the premise of Surowiecki's book held true.

In other technology arenas, institutions have embraced mobile technology, including location-aware wayfinding smartphone apps and interpretative apps created to replace traditional audio tours installed on tablet devices for visitors to borrow while at the museum. Alternatively, museums are utilizing social media to encourage conversations with the institution and between individual art lovers and visitors. Further, many museums have installed touchscreens and other interactive technology permanently in galleries to offer visitors additional information that cannot be contained in traditional wall labels. Museums have been embracing many types of technological opportunities, at varying degrees from institution to institution.

There has been quite a lot studied and written by museum professionals over the last thirty-five years about technology's use and spread throughout museums (Dobbs, Art Museum Association, & Arthur Andersen & Co., 1982; Institute of Museum and Library Services, 2006; Johnson, Witchey, Smith, Levine & Haywood, 2010). Over the past decade there has been a change in priority placed on the visitor experience in museums over the objects held in museums (LWRD Fund, 2001; Murphy, 2016; Weil, 1999). Participation and contribution offer visitors the opportunity to learn and see themselves as a part of museums (Simon, 2010). As technology has proliferated in museum spaces and institutional focus has shifted to visitors' experiences, professionals have sought to use technology to engage those visitors (Freeman, Adams Becker, Cummins, McKelroy, Giesinger & Yuhnke, 2016; Johnson, Adams Becker, Estrada & Freeman, 2015).

Some museum professionals' move toward including visitors' voices has ignited debate and conversations about the place of traditional curatorial authority in museums and what

including visitors' voices does to that authority (Evans, 2014; Ledbetter, 2011; Simon, 2010). Including visitors' voices threatens the traditional power structures of museums, which has historically prioritized curatorial voices and art historical correctness (Simon, 2010). The Web 2.0 format, commonly referred to as the Social Web, which saturates our world now in the form of social networking sites, search engines, and blogs can be looked to as a model for how technology can challenge traditional power structures since Web 2.0 websites get better the more people use them (O'Reilly, 2006; Schweibenz, 2010).

While research has been done looking at museums' goals and motivations around the introduction and implementation of mobile technology in museums, we do not yet have research looking specifically at the goals, motivations, and implications of museum technology projects that encourage visitors to contribute interpretive content. Additionally, we do not have cross-institutional research looking at how visitors respond to experiences that encourage their contribution or what those visitor contributions look like in terms of content.

The purpose of this study was to explore museums' use of technology-based, participatory experiences designed to encourage visitors to contribute interpretive content in art museum exhibitions. The study was guided by the following four research questions:

1. What are museums' motivations for implementing technology-based, participatory experiences for visitors in their exhibitions?
2. What are the institutional goals and intended visitor outcomes for these experiences?
3. How does the implementation of technology-based, participatory experiences for visitors influence or change exhibition development practices within museums?
4. What is the nature of the visitor response and content contributed by visitors to the exhibit through participatory, technology-based platforms?

As the field considers future technology for engaging their visitors, professionals would be well served with additional understanding of other museums' experiences. This research will help museum professionals and institutions think about the planning and implementation of technology-based contributory interactives in museum spaces. The research will provide new information about other museums' motivations, goals, and intended visitor outcomes which will provide references and examples for them in thinking about how they might frame their own technology-based contributory projects. The insights from this research will provide context for museums to think about the addition of tech-based interactives that feature visitors' voices and how those experiences will impact their work environments and gallery environments.

Chapter 2: Literature Review

This literature review situates the study within relevant research in the museum field. First, the history and growth of technology in art museums will be explored, followed by an examination of research on visitor participation in art museums. The chapter will then look at the meeting of these two areas in participatory technology in art museum spaces. Finally, the review concludes with a discussion of shared authority in museum contexts by including visitor and community voices.

History of Technology in Museums

The Art Museum Association published one of the earliest surveys about technology in museums (Dobbs et al., 1982). This survey looked at computer usage by museum professionals. The survey found that "computerization had not yet been embraced by the museum community at large" (p. 1). Many of the barriers were similar to issues museums face today: software not built for what museums need, expense, hardware investment is high, and tech support is not always helpful (IMLS, 2006). In the 1982 study, three hundred sixty-two institutions responded to the survey which was sent to 1,100 visual arts institutions in the US, yielding a 33% response rate. Results showed that 68% of respondents were not using computers at all, and 32% were using either a computer at the museum or in a remote location. There was a demonstrated intention to computerize with 79% of non-users planning such efforts. The conclusions drawn from the survey included that art museums did not yet see the opportunities presented by computer use and that institutions were "becoming increasingly aware of the potential uses of computers" (Dobbs et al., 1982, p. 17). While this is a very early survey concerning technology use in art museums it shows some striking similarities to today, namely that museums are

becoming more and more aware of the potential uses of technology and generally have an intention to move toward increased technology integration.

In January 2006, the Institute of Museum and Library Services published a report on the status of technology and digitization in US museums and libraries based on a survey in 2004 and comparing it to a baseline survey from 2001. Sixty-three percent of the 2004 museum respondents stated that they had funding for technology over the last year. While the survey yielded a lot of information about funding and technology usage, a particularly interesting insight was that "the majority of museums (80.3%) [did] not conduct assessments of user or visitor needs for technology-supported services or experiences at their institutions" (p. 22). The study did find that the adoption and use of technologies increased significantly over the three years between the two surveys including an increase in every type of technology asked about on the survey, including but not limited to computerized collection management systems, databases for membership development, desktop computers, and office productivity software.

As technology use grew behind the scenes in museums, it eventually began to show up in galleries for the public's use as well. Since 2002, the New Media Consortium has been producing Horizon Reports in various sectors and they started producing a report for museums in 2010 (Johnson et al., 2010). These reports look at future trends, challenges, and technologies in the field. The 2010 report highlighted mobile devices, social media, augmented reality, location-based services, gesture-based services, and the semantic web as significant future trends. Each of these technologies is discussed with examples of institutions already using the technology and within the larger museum world context. Concerning mobile devices, the report says,

> The relationship between mobiles and museums is a part of an ever-growing conversation around the topic of museum needs and visitor expectations. Visitors expect to play active rather than passive roles in their visits and museums with resources are scrambling to meet these expectations (p. 9).

The report looks at and highlights many of the opportunities for museums to use technology in their galleries. In the section about social media the report highlights that "Social media allow users and groups of users to collaborate and engage one another" and that they "provide a powerful construct with which to engage audiences" (p. 13).

As one moves forward in time through these reports, one sees the engagement with and adoption of many new technologies by museums. Mobile apps appear in the 2011 report, drilling down to a more specific technology that provides opportunities in and out of the museum space, especially tapping into location aware technologies (Johnson, Adams & Witchey, 2011). The same report highlights tablet computing saying, "The appeal of tablets is their potential to enhance in-gallery experiences" (p. 15). The 2013 report introduces "BYOD" or Bring Your Own Device as a significant technology (Johnson, Adams Becker & Freeman, 2013). BYOD relies on visitors coming into the museum with a mobile device on to which they could load an app or other interactive tool instead of renting a device like an audio tour wand. The 2013 report also highlights crowdsourcing as a technology trend on the rise with significant potential for museums. The report rather presciently notes,

> Crowdsourcing tangibly reveals the power of collaboration and dialog as visitors increasingly expect to engage with museums in a more personal way. While crowdsourcing is becoming widely used, museums still need to overcome challenges in embracing user-generated content and feedback. A genuine crowdsourcing project requires museums to relax their authority over the content and welcome ideas that deviate from what was expected in order to foster the type of synergy that frequently leads to innovation (p. 16).

The final particularly notable technology highlighted in the 2013 report is location-based technology with a focus on its potential to provide visitors with highly customized experiences in

museum spaces, such as wayfinding based on where they are currently located in the museum or directing visitors to nearby exhibitions or art works that match their preferences and interests.

Notably, the 2013 report also highlights the challenge that "Museums of all sizes are struggling to adapt to how technology is redefining staff roles and organizational structures" (p. 9). The struggles of staff seem to be somewhat constant throughout this history as both technology itself and the types of technology increase in museums (Dobbs et al., 1982; IMLS, 2006; Johnson et al., 2013).

The 2015 Horizon report highlights BYOD and location-based services again, while the 2016 report discusses location-based services at length (Freeman et al., 2016; Johnson et al., 2015). We see here how these reports get more specific and drill down to the most useful aspects of various technologies for museums. Reading through these reports gives one a true sense of the growth of technology use in museums, particularly as it has grown in application within gallery spaces.

The use of mobile technologies in museums has a special place within the history of museum technology. Falk and Dierking (2008) wrote in their chapter "Enhancing Visitor Interaction and Learning with Mobile Technologies" about mobile technologies and the contextual model of learning:

> Digital media experiences have the potential to effectively situate the visitor's museum experience within the broader context of an individual's life, community, and society; they also have the potential to allow significant customization of experience and to extend visitor experiences beyond the temporal and physical boundaries of the institution (p. 28).

They also emphasized that to be successful mobile technologies should support and expand visitors' previous experiences outside the museum and "directly support visitor's motivations for visiting and their interests before, during, and after the experience" (p. 28).

A 2012 Mobile in Museums study produced collaboratively by the American Alliance of Museums, the Museums Association, and Fusion Research & Analytics which looked at trends in US and UK museums found that more than half of US museums offered some form of mobile platform, whether it was a traditional museum-offered device or a mobile feature that could be used on a visitor's own device. The report noted that "art museums have traditionally been at the forefront of mobile offerings," although it did not specify why that was the case (p. 24). Eighty-four percent of the US museum respondents indicated that increasing visitor engagement was a goal of their mobile programs. The top three goals for visitor outcomes were a greater sense of engagement with the museum, increased learning, and being informed of upcoming events and exhibits. When it came to challenges, museums sang a familiar tune with funding and resources being the top two cited challenges to implementing mobile technologies. Management issues and internal differences of opinion were also repeated by many institutions.

This study also noted that the top three goals of mobile programs expressed by the participants were increasing visitor engagement, meeting visitor demand for mobile technology, and marketing or word of mouth about the museum (AAM, 2012). Additionally, the study found that at least 20% of non-mobile museums, who had not yet implemented mobile technology in their institution, said funding, internal resources, time commitment, lack of planning, maintaining technology, technological expertise, organizational support/approval, and internal barriers were some of the biggest challenges to implementing mobile technologies at their institutions. The top three cited challenges for both museums that had already implemented mobile technology and non-mobile museums were funding, internal resources, and time commitment.

A specific example of mobile technology in museums is at the Clark Art Institute, where educators used an Institute of Museum and Library Services grant to replace their wand audio tours with iPad minis loaded with multimedia guides (Friday, 2014). The team tried to develop a guide that would enhance people's experience of looking at art and not detract from the objects by diverting focus to the device. The interface contained approximately 150 objects from the collection with layered content that allows users to decide how deeply they would like to explore an object. Initial results of an internal evaluation indicated that visitors responded positively to the experience of the multimedia iPad guides (Friday, 2014). While this is just one example of museums' movement toward deeply visitor focused technologies, it shows the direction in which technological development is going in museums.

Moving from museum-provided devices to the Bring Your Own Device (BYOD) phenomenon, Scott Sayre of the Corning Museum of Glass presented on ensuring the success of such programs at Museums and the Web in 2015. The emergence of BYOD in museums in many ways mirrored the development and availability of cell phones, smartphones, and other mobile devices in society at large. The museum was interested in meeting visitor needs by developing their BYOD program. When Corning was developing their BYOD programming, they established eight success variables: awareness, access, compatibility, user capability, supporting amenities, user interest, usability, and impact. Sayre (2015) noted, "Visitor awareness of the availability of a BYOD program is by far the most critical, but often overlooked, component of a successful program" (Success variable 1 section). Institutional buy-in ended up being an incredibly important aspect of the success of a BYOD program as well.

As technology in art museums evolves, there are inevitable changes occurring in how museums and their employees do their work and engage with visitors (Bautista, 2012). Bautista

argues that the shifting popular culture has forced changes in the way museums do their work: that technology changes museums by its presence in them and the technologies change as they are utilized in new ways in those spaces. As populist museology arrived in the late twentieth century, museums have incorporated more technology to achieve the shifting goals of being visitor focused instead of object focused. Bautista writes,

> Understanding the changing nature of museology today helps explain how and why museums are creating new experiences not limited to physical or local places, how they are supporting an open, participatory culture while maintaining authority and expertise, and how they are establishing networked communities even as they continue to represent a central node within the global, distributed space of museums in the digital age (p. 356).

Technology has made its mark on culture and in turn cultural change has necessitated technological adaptation within museums. Perhaps one of the most recent and salient examples of technological adaptation within the art museum is Cleveland Museum of Art's Gallery One (Alexander, Barton & Goeser, 2013). Gallery One is located by the main lobby and central atrium space and is a gallery filled with six interactive touchscreen "Lenses" and a 40-foot touchscreen Collections Wall that allows visitors to interact with the museum's collection in new, fun, and innovative ways. Using the "lenses," visitors can search the collection by making a face into the camera and the system will match their expression with artworks from the collection or they can get familiar with a sculpture by trying to match its pose. Developed in response to audience research done at the museum, "Gallery One is conceived and approached as an interactive space that seeks to connect art and ideas, forge connections between art and people, and provide visitors with tools that enhance their permanent-collection gallery experiences" (Responding to audience research section, para. 1). The accompanying app ArtLens includes videos with interpretation from museum professionals and community members and allows visitors to create their own tours of the museum.

A year after the opening, Jane Alexander, the Chief Information Officer at the Cleveland Museum of Art, presented a look back over the installation's first year at the Museums and the Web conference in 2014. She stated, "From the beginning, the intention of Gallery One was to transform our visitors into participants rather than passive observers" (From observers to participants section, para. 1). Gallery One's opening coincided with the opening of a new museum restaurant, store, and glass-enclosed atrium and the museum saw a 39% increase in attendance after the opening of all the improvements. They also reported a 25% increase in attendance from groups with children and they "completed the first half of [their] fiscal year with an 80 percent increase in donations" (Return on Investment section, para. 2). A 2016 study of visitors' feelings regarding personalization in Gallery One showed that "the tour creation feature and personalization options in general appealed to [visitors] because it allowed them to focus their visit" (Loesser, p. 36).

Visitor Participation & Contribution in Museums

In the past decade, there has been an increase in focus on visitors' experiences in museums. This has manifested an increase in programming that emphasizes active visitor participation in museum spaces. In 2010, based on theoretical underpinnings developed by such prominent museologists as John Falk, Elaine Heumann Gurian, Kathleen McLean, and Stephen Weil, Nina Simon published her seminal book *The Participatory Museum*. Simon builds on Weil's famous idea that museums have gone "from being *about* something to being *for* somebody," and lays out principles of participation for museums and possible approaches institutions might use to incorporate more participation in their exhibitions and programming (Weil, 1999, p. 229).

In her book, Simon proposes the following framework of participation in museums based on a framework developed by researchers at the Center for Advancement of Informal Science Education in their Public Participation in Scientific Research (PPSR) project about Citizen Science programs. Simon adapts and adds to the PPSR project framework to make it specific and applicable to museum environments. The framework is made up of four models of participation: contribution, collaboration, co-creation, and hosted. The contribution model calls for visitors to make additions in specific and limited ways to an institutionally designed experience, while the collaboration method sees an institution working with a group of people to structure an institution-driven experience using the people's input. The co-creation model means the institution and their community work together to design the experience and its content from its inception, and finally, the hosted method is when an institution opens its space and/or resources to a community group to fully design and implement an experience.

Simon highlights that contribution is the most common and easily implemented form of participation. In Simon's model of contribution there are three approaches to contribution in visitor experiences: necessary contribution, where the visitors' contributions ensure the success of the project; supplemental contribution, where visitors' contributions enhance the project; and educational contribution, where the visitors' contributions are more about providing them with the experience of using certain skills. Simon also outlines the specific needs of participants when it comes to good contributory projects and says they must "provide specific, clear opportunities for visitors to express themselves" (p. 212), situate the experience so that visitors can contribute regardless of past knowledge or experience, "respect visitors' time and abilities" (p. 212), and establish how the contributions will exist within the experience. Organizations adding contributory experiences to their exhibits must model contribution for visitors by showing how

contributions are made and the type of contributions the institution desires. Finally, museums will likely find they need or want to curate the contributions in order to remove inappropriate, offensive, or irrelevant contributions.

While we lack cross-institutional formal data to show how contribution matters to visitors, individual institutions' evaluations show a trend of visitors caring more about the outcome of contributory experiences than the process of them (Simon, 2010). Visitors tend to be impacted most by the diversity shown by visitor contributions and the personal nature of those contributions. Simon asserts, "Visitor-contributed content is often more personal, more authentic, more spontaneous, more diverse, and more relevant to visitors' own experiences than institutionally designed labels and displays" (p. 230).

Shifting to thinking about how museums are implementing participatory experiences, looking at four case studies of art museum participatory experiences Brummett (2012) found that while art museums are taking up the charge of including participation in their programming, the "significant visitor or user experience component […] is not being discussed in a coherent way across the field" (p. 42). From her case studies, using interviews with museum professionals and document analysis of public facing text about the participatory programing, Brummett found that a wide range of types of participation are being incorporated into art museum programs, such as crowdsourcing contributions and opinions, co-creation of exhibition content or curation, and Audience-as-Artist programming where visitors participate in the artistic experience and the focus is on the creative process rather than the outcome. She also found that the public facing messaging and interview subjects' responses focused on the institutional goals rather than on what participatory programming could do for the participants. Brummett asserted that "participatory programming is being introduced into art museum spaces without being fully

considered" in terms of the types of participation the experiences provide and whether they are reaching their intended audiences (p. 43). Additionally, she suggests that a profession-wide vocabulary for this type of programming and "experiences would greatly improve the information available" across institutions (p. 43).

One example of what these participatory and collaborative programs can look like is the Denver Art Museum's (DAM) *Spun* exhibition and reinstallation of the textile arts collection (Van Dyke, 2013). The Master Teacher for Textile Art and Special Projects, Sefania Van Dyke, worked with community members involved in the local quilting and creative communities to develop and install the Thread Studio. When the space opened visitors could contribute by stitching on an embroidery table or weaving on a loom, not only leaving their mark on the space but also, hopefully, learning something by doing it themselves.

Participation is growing and manifesting in a number of different ways in museums, but institutions need to be intentional about how they incorporate visitors for the experiences to be successful. The field has outstanding examples for institutions to look to for inspiration and direction in this area. As museums consider these moves, they may find that technology begins to emerge as offering opportunities in this area.

Participatory Technology in Museums

With the movement toward visitor-centered participation in museum spaces, technology's potential applications to enhance participation have been, and continue to be, explored. For the purposes of this study, technology in museum exhibitions takes three forms: basic technology, like screens which play content on a loop and do not respond to visitors; interactive technology, such as touch screens which allow visitors to investigate information further based on their desires; and participatory technology, which allows visitors to contribute in some way to

exhibitions. The New Media Consortium *Horizon Reports* from 2015 and 2016 show the growth and future of participatory technology in art museums. Beyond the specific technologies highlighted in these two reports, the reports highlight the growth of participatory experiences in museums and how this growth and movement is directing technological applications and uses in significant ways (Freeman et al., 2016; Johnson et al., 2015).

Social media is a significant aspect of participatory technology in museums. Most of this engagement and participation through social media is happening outside of museum spaces. Fletcher and Lee (2012) surveyed US museums about their social media usage and what factors professionals believed motivated visitors' participation via social media. They administered a 22-question survey online and received 315 fully completed responses, a 36 percent response rate. Ninety percent of the respondents said that their museum currently used social media in some capacity. Most museums were using social media for marketing purposes such as event postings, promotions or announcements, and to reach larger or newer audiences, but "11 percent of respondents indicated that they use social media for dialogic/conversational engagement frequently" (p. 511). In terms of factors that motivate participation, overall content quality and type of social media were indicated as the most influential factors, while direct calls for participation were also highlighted as highly motivational by professionals who use social media for dialogic engagement.

Social media is being used for a variety of purposes but some museum professionals have expressed an interest in how it can contribute to learning in museums (Russo, Watkins & Groundwater-Smith, 2009). Social media features such as rapid publication, personalization, content sharing, and content creation are among the most dynamic offerings of the social media field for informal learning purposes. Participation through these features can be incentivized by

museums encouraging knowledge sharing, voice, education of museum professionals, and acknowledgement: “Acknowledging audience voice can provoke authentic learning experiences, strengthen existing communities of interest and encourage return visitation and a lifelong affiliation with the institution” (p. 163).

When thinking about these participatory technologies that exist in an online space like social media, it is helpful to contextualize participation within larger trends about how people behave online. Web researcher, Jakob Nielsen, introduced a now widely referred to rule to the world in 2006 called the 90-9-1 Rule or the Rule of Participation Inequality. This rule says that “90% of [online] users are lurkers (i.e., read or observe, but don't contribute). 9% of users contribute from time to time [… and] 1% of users participate a lot and account for most contributions” (Nielsen, 2006, para. 4). For some years, this rule was highly touted and dictated how many view participation on the internet. Some more recent research indicates that this rule may be getting outdated, with current numbers in private online communities being closer to 70% lurkers, 20% sometimes contributors or commenters, and 10% creators (Schneider, 2011).

In 2011, Li and Bernoff released the second edition of their book *Groundswell: Winning in a World Transformed by Social Technologies,* which outlined a more robust framework of seven types of people and how they behave on the social web. The “Social Technographics ladder” organizes the seven types according to the level at which they contribute to the online environment on a monthly basis (p. 43). The seven types are creators, who produce their own content by writing a blog or uploading videos they create; conversationalists, who tweet or update their social networking sites at least weekly; critics, who rate and review products or establishments or comment on blogs; collectors, who gather webpages using a website like Pinterest or add tags to webpages or photos; joiners, who maintain a profile on and visit social

networking sites; spectators, who consume content on the internet but do not take other actions around it; and inactives, who use the internet but do not visit or interact with the social web at all. People can, and often do, fall into more than one type on the ladder. In the US, adults that use the internet breakdown like this: creators 23%, conversationalists 31%, critics 33%, collectors 19%, joiners 59%, spectators 68%, and inactives 19% (Li & Bernoff, 2011). These numbers provide valuable context for museum professionals thinking about online participation and technology-based participation which may operate in ways reminiscent of the social web, like in-gallery mobile technology.

Mobile technology, including mobile devices themselves and the software that can be installed on them, has become a focus of participation potential in museums (Johnson et al., 2015; Freeman et al., 2016). Mobile devices allow visitors to move throughout the museum while they use them and the software and content that can be accessed through those devices is more expansive compared to what museums can offer visitors in static exhibit elements. Because mobile technology has "the potential to support visitors' meaning making by framing and focusing their activities […] and interactions," visitors are incentivized to participate more (Walker, 2008, p. 121). Mobile technologies can help to narrow the focus for visitors and encourage participation through specific circumstances in order to support more learning. Walker (2008) did research first concerning students using early mobile devices or personal digital assistants (PDA) in informal learning environments, and later on more general audiences using PDAs in these environments. Walker concluded from his research,

> Museum visitors learn more, and are more inclined to contribute and share, when their activities are concentrated on specific subjects and on a limited number of objects or exhibits. And learning occurs when museums cease to view visitors as passive containers and begin recognizing them as active constructors—not only of meanings inside their heads but also of connections and creations in the world, on the screen, in the museum, and beyond (p. 121).

At the 2015 Museums and the Web conference, professionals from The Phillips Collection and the Indianapolis Museum of Art (IMA) presented about their experiences deploying an app that allowed visitors to make impressionist versions of photos they took as an interactive piece in two Impressionism exhibits (Sternbergh, Fantoni & Djen, 2015). The IMA team developed an app, *Pointillize Yourself*, that allowed visitors to take a self-portrait, or selfie, and then apply a pointillist filter to match the impressionist style of the exhibit. The app ran on iPads in the exhibit and users could share their creation via social networks or email. Some of the portraits were also projected on the wall outside of the interactive. The museum hoped people would enjoy the playful aspect of the app. The IMA's evaluation showed that 61% of visitors used the app, which made it the most successful interactive at the museum at that time as compared to past use rates between 22 and 40 percent. They also found that the interactive was popular across age groups and "visitor satisfaction with the activity was very high (4.73 out of 5 among those that used the app)" (Sternbergh et al., Evaluation Results and Lessons Learned section, para. 6).

The team at the Phillips Collection collaborated with the professionals at the IMA to adapt the *Pointillize Yourself* app and use it in their own exhibit. The experience at the Phillips Collection was titled *#NeoImpressed* and was similar to the set up at the IMA, although there was a backdrop for the photo, the subject was standing rather than sitting and the photos were displayed on a monitor in the same interpretive space as the interactive. The museum was motivated to include the interactive to try something new in an exhibition, as they had not previously had a permanent interactive in any of their exhibitions. The Phillips Collection found that 15% of the visitors to their exhibit took a photo (Sternbergh et al., 2015).

As far as permanently installed in-gallery technology, an interesting example can be seen at the Dr. Johnson House in central London, which tells the story of the man who compiled the first English dictionary. Here an interactive work desk was produced that allowed visitors to add their own words and definitions to the exhibit (Patel, Heath, Luff, vom Lehn & Cleverly, 2016). The team emphasized that with participation and contribution in museum exhibits comes an "increasing importance […] to provide opportunities for creativity; opportunities not simply for learning but for what have been characterised as 'transformational experiences', experiences that significantly change an individual's attitudes, interests, appreciation beliefs and values" (p. 70). Visitors utilized the interactive in ways the team did not anticipate, specifically making up words and joke-filled definitions, and visitors particularly made the activity more playful than the designers had initially intended. The interactive was a "digital/physical interface" that converted what visitors wrote into a digital version which was then also displayed on a small screen in the exhibit and added to an online database people could access through the museum's website. The team was surprised to find that visitors' awareness of the larger global audience played a significant part in how they thought through the additions they made to the dictionary: visitors had a social experience writing definitions with their companions but visitors were also conscious of the global audience that could see the definitions and this awareness seemed to influence what visitors wrote.

As we can see, museums have clearly taken up the charge of using technology to engage visitors in participatory experiences. Through research, practitioners have found that technology supports visitors in making contributions by making the process easy and familiar, as well as directing their experiences by guiding their focus.

Sharing Authority in Museums

While visitor participation and contribution may help visitors learn and feel valued, there has also been much concern expressed over the current status of museum and curatorial authority (Simon, 2010; Evans, 2014; Ledbetter, 2011). Wetterlund (2012) writes about the arguments between education and curation departments relative to museum authority and who or what is responsible for the "assault" on museum authority (p. 89). Wetterlund argues that "museum education isn't responsible for the current undermining of museum authority; rather it's the Internet and social media" (p. 89). It is certain though that education, technology, and society at large are changing the museum landscape:

> In this current shift, the museum is no longer working *for* its visitors, but *with* its visitors, as participatory culture enables new shared experiences such as crowd-curated exhibitions, social tagging, and social media; shared between the museum and its visitors, and also between visitors and their peers (Bautista, 2012, p. 350).

But one might ask: are museums' authority being eroded? Doesn't expertise matter (Simon, 2008b)? Simon asserts that expertise will always be important but it should not give museum professionals the power to control the museum experience.

A number of curators have made calls for more visitor-centered, participatory curation models. Evans (2014), who was a curator at the Columbus Museum of Art at the time, wrote about her experiences at the museum as a curator and collaborator during a time when "the traditional curator's role is under scrutiny" (p. 152). She emphasizes that curators need to examine their assumptions about visitors wanting curators' expertise when they come to the museum and that that has been an ongoing challenge. Pulling from her professional experiences, Evans describes a story that made a particular impression on her: a man who was initially uninterested in the interactive element in a gallery ultimately not only engaged with the interactive but the experience also led him to have a lengthy conversation about the art in that

gallery with his companion based on the interactive experience. She writes that this story and many others like it made her reconsider her reservations about participatory, visitor-focused elements. She concludes, “If we as museum professionals can let the visitor's experience with our treasures be at the center of our efforts, I can imagine that the next decade will transform and deepen the curator's role in positive and invigorating ways” (p. 160).

Duclos-Orsello (2013) offers guidance for museum professionals about what grappling with shared authority requires of us, “that we consider ourselves first and foremost as both educators and learners. We must recognize that we always and already share authority, for we do not have all the answers — or even all the questions” (p. 122). Remembering this advice may help quell some of the fears that arise as professionals navigate new roles and release old methods of control.

Kelly (2006), the head of the Australian Museum Audience Research Center, presented her research regarding museums as information sources and whether people will continue to choose museums over other sources of information. This small but interesting study used focus groups in Australia and surveys in Australia, Canada, and over the internet. Over 80% of each of the survey groups thought museums should allow visitors to make comments on the information being presented. And yet still people see museums as important sources of information. Kelly’s research also indicated that museums need to continue to grapple with issues of “authority, who’s [sic] voice/s are being represented and trust” (p. 16).

To understand the lay of the land regarding technology, participation, and authority, one can look to the social web at large and what is commonly referred to as Web 2.0. Publishing mogul Tim O’Reilly defined Web 2.0 as a website or application that “gets better the more people use it” (2006, p. 6). Schweibenz (2011) asserts that museums must adapt to Web 2.0

because of its growing importance due to demographic changes that mean more and more of the population has grown up with digital technology and the internet. Simon (2010) takes this one step further and asks the question "What does a cultural institution look like that gets better the more people use it?" (p. 85). But Finnis (2008) emphasizes that as museums adapt to Web 2.0, traditional authority structures are indeed challenged (as cited in Schweibenz, 2011, p. 3). At the same time, Simon (2010) asserts that these Web 2.0 experiences "provide more than personalized experiences; they also provide community value" (p. 85).

Simon (2010) argues that museums can maintain authority while relinquishing content control by using the power of platforms. She writes, "Developing platforms to harness, prioritize, and present a diversity of voices around content does not mean giving all the power to visitors" (p. 121). She outlines four powers that museums as platform managers maintain control of: defining the types of interaction users can have, setting the rules of behavior, utilizing user-generated content, and highlighting content that fits the museums' goals and intentions for the platform. Good design of platforms allows the museum to clearly communicate their values and desired types of contributions for the situation.

Crowdsourcing is a form of shared authority that has been increasing in popularity with museums (Johnson et al., 2013; Ridge, 2014). One of the earliest crowd-curated exhibits was *Click! A Crowd-Curated Exhibit* at the Brooklyn Art Museum (Bernstein, 2014). The show opened in 2008 and was inspired by James Surowiecki's book *The Wisdom of Crowds,* which "asserted that a diverse crowd is often wiser at making decisions than expert individuals" (p. 19). The museum made a call for photography from local Brooklyn photographers and then had the public evaluate the submitted photographs. Simon hailed *Click!* as her "hero" and "what museum innovation looks like" (Simon, 2008a). She also pointed out that the show "was controversial

because it threatened the traditional power relationships in a cultural institution between visitors and staff, experts and amateurs" (Simon, 2010, p. 120).

The power struggles inherent in allowing other voices in the museum are a primary reason we see so much resistance to these techniques (Simon, 2010). There will be necessary shifts in job responsibilities as "institutions' roles as content authorities change" (p. 120). Proctor (2010) suggests that curatorial roles may shift to one of "storytelling" instead of their traditional academic knowledge roles (p. 38).

In 2008, the Manchester Museum in the United Kingdom opened an exhibit that featured the Lindow Man, a bog-body found in a peat bog near Manchester (Brown, 2011). The exhibit opened up questions about the ethics of collecting and displaying human remains to the public and acknowledged that not all the facts are known about the Lindow Man. The exhibit contained multiple perspectives, created an "empathetic rather than forensic" experience, and invited visitors to contribute. The museum studied visitors' responses using questionnaires and Personal Meaning Mapping. Based on the results, Brown posited that the people who were upset by the exhibit were "particularly those who are wedded to the tradition of museum as authority and expert," while many people appreciated the simple, everyday esthetic (p. 145). The research also quite clearly indicated that "almost all the participating visitors learned something, were moved by the experience and felt able to contribute to the debate surrounding the 'bog body mystery'" (p. 146).

While there has been much debate back and forth about what the inclusion of visitor voices is doing to authority in museums, many practitioners are becoming convinced that this is a natural progression in museum spaces and that including those other voices does not invalidate the curatorial voice or authority. Some museum professionals have even found that working with

visitors and sharing authority with them allows visitors to learn in a multi-faceted way: both in knowledge and emotional experience. These movements to include visitor voices are leading to changes in the way curators do and think about their jobs as well.

Summary

There is substantial literature covering the history and growth of technology use by museums. The trend is clear: technology will continue in museums and museums will continue to experiment with new technologies. As the field has additionally moved toward visitor focus, participation based on inviting visitors to contribute to museum spaces has grown as well. Research shows that museums have paired these two trends and begun to use technology for the purpose of having visitors participate and contribute. The literature has also shown that bringing visitors' voices into museum spaces challenges the traditional power structures museum professionals are used to working within. We do not yet have literature that tells us what museums' goals and motivations are around adding technology-based contributory experiences or what the implications of those experiences are for those institutions. Additionally, the literature does not tell us what visitor responses to experiences that encourage their contribution look like across institutions. This study looks to fill these gaps in the literature.

Chapter 3: Methodology

The purpose of this study was to explore museums' use of technology-based, participatory experiences designed to encourage visitors to contribute interpretive content in art museum exhibitions. The study was guided by the following four research questions:

1. What are museums' motivations for implementing technology-based, participatory experiences for visitors in their exhibitions?
2. What are the institutional goals and intended visitor outcomes for these experiences?
3. How does the implementation of technology-based, participatory experiences for visitors influence or change exhibition development practices within museums?
4. What is the nature of the visitor response and content contributed by visitors to the exhibit through participatory, technology-based platforms?

This chapter describes the study design, sampling, data collection and data analysis procedures, and methodological limitations.

Sampling

This study was designed as a case study (Yin, 2008), with three case study sites. Sites were selected based on two key criteria: 1) they had to be art museums; and 2) they had to have had or currently have a technology-based, participatory experience that encourages visitors to contribute to interpretive content about objects on display in one or more exhibitions. Research sites were limited to art museums in order to ensure visitors were being invited to contribute interpretive content about similar types of objects. Eight possible art museums in the US were identified; three were chosen that best exemplified experiences that focused on visitors contributing in meaningful ways to interpretive content about art objects in gallery spaces that would be available for other visitors to experience subsequently.

The institutions used as cases for this study were the Fine Arts Museums of San Francisco (FAMSF), made up of the de Young and the Legion of Honor in San Francisco, CA; the Frye Art Museum in Seattle, WA; and the Worcester Art Museum in Worcester, MA. FAMSF developed an app called *Voices: FAMSF* with Earprint Productions and sound artist Halsey Burgund which played audio of museum professionals and community members interpreting the outdoor sculpture at the two FAMSF institutions and also allowed visitors to record their own thoughts about the sculptures in response to prompts from the museum. The Frye Art Museum's October 2014-January 2015 exhibition *#SocialMedium* was crowd-curated, by people voting online for works from the Frye's Founding Collection and the most popular were displayed. The museum used comments from the initial social media voting period as the labels in the gallery and there were also screens in the exhibit which displayed comments people made on social media about the show while it was up. The Worcester Art Museum reinstalled their Old Masters galleries under the name [remastered] and focused the installation on people's close engagement with the art including iPads with extended labels for works in the galleries from museum professionals, community members, and gave visitors the opportunity to contribute labels as well.

Data Collection

Data were collected for this study through interviews, document analysis, and analysis of visitor contributions to exhibition content. Semi-structured interviews were conducted with staff members and contracted collaborators involved in the planning, production and implementation of the participatory technologies. Specifically, during March and April 2017, four professionals were interviewed who had worked on *#SocialMedium* at the Frye, two who worked on the Voices app for FAMSF, and one staff member who worked on the [remastered] galleries

experience at Worcester. Interviews were conducted via phone and in person, and lasted approximately 30 minutes. (See Appendix A for interview guide)

Professionals represented a range of departments including Education; Marketing and Communications; Collections and Exhibitions; and one professional from an outside company that collaborated on one of the museums' technology experience. Two of the professionals were no longer employed at the museum where they had worked during the planning and implementation of their projects. Documentation was gathered from all three sites including website copy that described the experiences and the exhibits as well as summative evaluations of the experiences or the exhibits of which the experiences were a part.

Finally, visitor contributions were collected from sites and from public social media for analysis. Because the Frye's exhibition used existing social media platforms, the researcher collected publically shared visitor contributions from Twitter and Instagram that included the exhibition's hashtag during the time that the exhibition was open to the public: October 1, 2014, when the exhibition opening was held, to January 4, 2015. Posts from the museum, exhibition partners, other cultural institutions, and posts that were not related to the poster visiting the exhibition were not included for analysis. Visitor contributions from FAMSF were collected from the evaluation the institution had shared with the researcher, because the evaluation had transcriptions of these contributions. The contributions were from an invitation-only beta test of the Voices app between November 15 and December 7, 2014. Finally, visitor contributions from Worcester were collected from the two portals on the museum's website which display visitor contributions about two of the paintings in the galleries. These portals also allow people to add comments from their computer at home, so it is possible that some contributions included in the study were not made while the writer was in-gallery.

Data Analysis

All interviews were transcribed and analyzed within cases and across the cases as well. Using the research questions as a guide, the researcher identified similarities and differences across sites guided by Yin's (2008) system of iterative analysis. Based on this analysis, themes and sub-themes emerged from the data. The General Learning Outcomes framework developed by The Research Centre for Museums and Galleries in the Department of Museum Studies at the University of Leicester was used to categorize museums' intended visitor outcomes (Moussouri, 2002). Themes were organized by research question with corresponding quotes and document excerpts into a coding rubric. (See Appendix B for coding rubric) After the coding rubric was created, it was reviewed by a critical friend to check consistency and validity.

Limitations

The most significant limitation of this research is that it only has application for art museums, because the museums sampled for it were restricted to art museums. While this restriction allowed for the cleanest comparison between sites, it does mean that the results cannot be utilized by other types of institutions without considering the differences in the nature of interpretation of different types of collections.

Another limitation of the study is that it relied on staff reflection on the projects, some of which took place some time ago. The data may suffer from subjects not remembering events readily or potentially remembering the events surrounding their project in a more positive or negative light based on later events. The results might look different if this study was conducted during the planning and implementation of this type of project. The results of this study are limited by the memories, and potentially related emotions, of the participants and how clearly they reflected on their experiences.

Chapter 4: Results & Discussion

This chapter presents the results of this study. It begins with detailed descriptions of the three case sites focusing on the technology-based, participatory experiences that encouraged visitors to contribute interpretive content at each of the sites. The chapter continues with a discussion of the themes that emerged under each of the study's four research questions.

Case Study Site Descriptions

Technology-based, participatory experiences designed to encourage visitors to contribute interpretive content were studied at three different museums: the Fine Arts Museums of San Francisco's *Voices: FAMSF* app, the Frye Art Museum's social media gallery participation in their 2014 *#SocialMedium* exhibition, and the Worcester Art Museum's interactive iPads in their permanent [remastered] galleries.

Voices: FAMSF app.

The Fine Arts Museums of San Francisco (FAMSF) composed of the de Young and the Legion of Honor are located in San Francisco, CA. The *Voices: FAMSF* app that they developed with Earprint Productions and sound artist Halsey Burgund played an audio soundscape that was location aware and interpreted the outdoor sculpture at the two FAMSF institutions. The app was released in beta in October 2014 and to the public in February 2015. The soundscape was made up of music, recordings of museum professionals talking about the sculptures, and recordings of community members responding to prompts about the sculptures at the two museums. The app's soundscape wove these different recordings together for users as they moved through the sculpture gardens.

The app allowed users to choose whether they would like to hear just museum professionals talking about the sculptures, just community members talking about the sculptures,

or a mixture of both. The app also allows visitors to record a 25 second response to one of four prompts about the sculptures: What do you first notice about this object or place?, Does this object or place evoke memories?, What question would you ask the artist about this object?, and Say something about a detail you notice. Visitor contributions play once for the visitor when they initially record it and then go into a holding portal for staff to review to ensure there is no profanity or inappropriate content. Once the contributions are approved, other visitors hear them out in the garden when they have selected to hear community voices during their experience. The app also allows users to access additional information about artworks through an "Explore more" function.

#SocialMedium exhibition.

The Frye Art Museum is a free art museum located in Seattle, WA that grew out of a foundational art donation from Charles and Emma Frye. From October 2014 to January 2015, the Frye Art Museum held an exhibition entitled *#SocialMedium* which was crowdcurated by people voting on the 232 paintings from the museum's Founding Collection across four social media platforms: Facebook, Instagram, Pinterest, and Tumblr. The 40 paintings that had the most interaction in terms of likes, comments, and reposts were included in the show along with a selection of the comments from the online contributors which formed the wall labels in the exhibition. These labels also listed a website url for each painting that visitors could visit to read more comments and add their own. At the beginning of the exhibition, the names of every citizen curator that had voted on the pieces to be included in the show were placed the walls.

There was also a screen in the exhibit which displayed a live feed of comments people made on Instagram and Twitter using the show's hashtag. Additionally, the show had an audio tour that featured informal content related to the paintings in the show, where visitors were

encouraged to record up to three minutes of audio to submit for inclusion. The museum brought in an outside design firm, Civilization, to do the branding and visual identity for the show.

[Remastered] galleries iPads.

The Worcester Art Museum is a medium sized encyclopedic museum located in Worcester, MA. The museum reinstalled their Old Masters galleries in September 2013 under the name [remastered] with a new gallery concept. The reinstallation focused on people's close engagement with the art by removing traditional wall labels, using bold wall colors, lowering lighting, and tilting the paintings towards viewers. The [remastered] galleries include two iPads with extended labels for works in the galleries written by museum professionals and community members, including university professors and clergy members among others. The iPads invite visitors to contribute labels themselves and read what other visitors have contributed for just two of the paintings at any given time. The paintings featured for this interactive change periodically. Visitors are simply prompted with the question "What do you think?" and the instruction to write their own label.

1) What are museums' motivations for implementing technology-based, participatory experiences for visitors in their exhibitions?

To answer this question, the researcher interviewed participants about the early conversations and planning process that led to the experiences, as well as the goals for the project and why digital technology seemed like the best way to achieve these goals. The researcher also consulted the museums' website descriptions of the experiences and the institutions' summative evaluations of the experiences and exhibits. Motivations were defined as general ideas and reasons why the museums started developing the experiences in the beginning and were distinguished from institutional goals, which are addressed under the second research

question. Through the interview questions and document review, five themes emerged as motivations for implementing technology-based, participatory experiences for visitors: 1) to enhance the visitor experience; 2) to keep up to date with general technology use or technology use among museums; 3) to try something new; 4) to offer alternative perspectives; and 5) to break down authority and/or empower visitors.

Enhancing the visitor experience.

All three sites' participants talked about being motivated by a desire to enhance the visitor experience. The sites used different words to describe this but their statements all related to creating an improved experience for visitors in some way. At FAMSF, one staff member stated, "We thought 'this is great' and we just loved the idea of people not having to look at their [device], and not having to punch numbers in and just being able to have this magical experience." Another person stated that there was "a very important goal of transformative experience" and that one of the project leaders "was very clear about wanting to do something that was magical, was experiential, was unexpected, was surprising – all those words." FAMSF's version of enhancing the visitor experience was to create something that went beyond other museum experiences.

The Frye's staff talked about creating an integrated, immersive experience for visitors: "So kind of trying to merge the digital and in person experience as much as possible." Another person from the Frye described it this way: "We wanted it to feel more immersive, like you were inside one of these portals, and that you were inside this dynamic type of online social engagement setting." The Frye's version of enhancing the visitor experience focused on "curating an experience for the public."

At Worcester, enhancing the visitor experience took the form of offering visitors choice. A staff member said of the project,

> "Big picture about what we think about these touch interactives in the gallery are that they give the visitor more depth, more content if they choose to seek that out. Basically, it's there for them so in a way we expand on that traditional wall label and give more content and more information via the iPad."

This staff member added in an email communication, "The most important fact regarding the inclusion of iPads is the fact that these three galleries do not have any wall labels. […] However, there is a vast amount of information about these works that we have available, and we wanted to give visitors access to that, *if they choose*" (emphasis original). The museum's website described the gallery experience this way: "This project is one of many where the Museum is focused on reshaping the visitor experience." Worcester was motivated by reshaping the visitor experience and allowing the visitor additional choice in that experience.

Keeping up to date with other museums' and/or general technology use.

Participants at all three sites mentioned technology use and keeping up with either what other museums were doing or technology trends in the general culture. A participant at Worcester specifically said, "One goal that's kind of an unwritten and unstated goal is certainly to keep up with what other museums are doing." It was also noted at this site that visitors' expectations of technology also played into this motivation: "It was very important for us to make sure that visitors who have come to expect technology in the galleries, and expect being able to have information at their fingertips about what they're looking at, that we move forward with some kind of technology solution."

Participants at the Frye noted that being inspired by what some other museums were doing with social media was a motivation for them in planning the *#SocialMedium* show. Two participants referred to another museum's social media presence when discussing motivations

together with the researcher: "LACMA was doing really cool [Snapchat] posts at the time […] just really kind of sacrilegious things with their images, so we were like 'We wanna be like them.'"

At FAMSF, the museums' locations in San Francisco, so close to Silicon Valley, contributed to the motivation to add new technology to their offerings. A participant stated,

> "We had a new director of information technology, and he felt compelled that we did need to do something new with technology because in our case it's really been quite this interesting conundrum that we're right here in the heart of Silicon Valley, yet we're not as an institution by any stretch of the imagination, a forerunner in technology."

This pressure, while not from the museum community as with the other sites, is a similar motivation.

Trying something new.

Trying something new emerged as a strong motivation for all three of these sites. At the Frye, a participant noted that one motivation was to "use social media platforms in a new way for the museum." The summative evaluation for *#SocialMedium* stated, "After sixty-two years of displaying the Founding Collection, Frye staff was looking to help visitors find new ways to engage with this collection." Study participants echoed this sentiment by saying, "We wanted to breathe new life into the collection" and "[We were] trying to bring a contemporary angle to a historical collection."

Worcester highlighted that because the exhibition was different from what they have done in the past, they were motivated to try new things in that space. One participant said, "Because [remastered] is really an experiment for us, we think of all our gallery spaces as laboratories of learning, so we're just trying different new things when we can. It's a very different visitor experience." The museums' website also highlights this element of newness in

the [remastered] galleries: “The goal is to balance opportunities for quiet contemplation—the ‘traditional’ museum experience—with new interactive and experimental programs.”

At FAMSF, a participant characterized the early conversations about the project as an “open-ended dialogue to ‘reinvent the audio tour’ onsite.” The participant continued,

> “They were interested in exploring new ideas, how could they try something that was fresh and new and utilize newer technologies that could help them move forward and express what is needed in museums, which is to step outside the normal scope of permanent collection audio tours on a normal device that follows a cookie cutter delivery mode.”

Another participant added, “The institution liked the idea that it was different….” In FAMSF’s case trying something new seemed to be tied up with the motivation of adding additional technology of some kind.

Offering alternative perspectives.

All three museums demonstrated a motivation to share alternative perspectives with visitors from the traditional art historical or curator voice. Worcester highlighted their desire to give visitors more variety:

> “That alternative voice, so you aren’t reading this very dry art historical lecture type, 150 word write-up about the piece, but some people might want to come at it from the student perspective or a philosophical perspective, or we had members of the clergy talk about one object within the gallery that has religious content. We found those varying views were very helpful in interpreting these works in a different way.”

The Frye on the other hand, wanted to continue to offer alternative perspectives via an idea of the “citizen curator” that they had already been working with in a couple of prior shows:

> “It seemed like there was continued interest in seeing what it would be like to have this really expansive idea of the citizen curator come in and engage the collection. And just have a different lens into, it’s like crowd sourcing right, what type of additional information do crowdsourcing get, do we get into peoples’ view of the collection.”

While the museums had different amounts of experience with presenting alternative voices in their space they were both motivated by including them.

At FAMSF, one staff member in particular voiced a motivation to include alternative voices. The staff person stated, "I felt really strongly about the community voices." The museum's website description of the app highlights the inclusion of visitors' voices as being a continuation of an institutional practice: "This combination of voices continues the Museums' tradition of encouraging art exploration as a conversation, not a lecture."

Breaking down authority and empowering visitors.

Two of the three cases also displayed a motivation to break down authority in the museum space and empower visitors to contribute. FAMSF and the Frye expressed that empowering visitors was a motivation, while Worcester did not display this motivation in the development of their [remastered] gallery experience. At FAMSF, one of the participants noted, "For me one thing that was really important too was for other people to see that, other museum visitors to understand that their voices and their interpretations are valid." Another participant reinforced this motivation by highlighting "breaking down the hierarchy of the museum voice. Creating a balance."

At the Frye, including visitors was central: "We were trying to make citizens feel like curators," one participant said. Another participant added, "I think one of the goals was to break down this idea of a hierarchy, that the curators are kings of the castle, ruling this space and sort of speaking down to the uneducated gallery visitors." Finally, a third participant took the sentiment even further: "It's like giving everybody a freedom, kind of. Opening up a dictatorship or something." Including visitors as curators and breaking down the hierarchy of museum spaces was a central motivation for the development of the *#SocialMedium* exhibition.

2) What are the institutional goals and intended visitor outcomes for these experiences?

To answer this question, the researcher questioned participants about formal institutional goals, which are defined here as measurable outcomes, as well as what they hoped the project would do for visitors and what they thought visitors would get out of interacting with the technology. Summative evaluations were also consulted to identify institutional goals and visitor outcomes. Visitor outcomes were organized around the Generic Learning Outcomes framework developed at the University of Leicester (Moussouri, 2002).

Institutional goals.

Two themes emerged across all three institutions in terms of their goals. Those themes were 1) expanding audience and/or bringing visitors into the museum; and 2) increasing engagement and/or interaction. A third theme of gathering data or information about their audience emerged for just two of the sites. Finally, two of the institutions had stated goals that they did not share in common with the other sites: adding technology and increasing the museum's visibility.

Expanding audience and/or bringing visitors into the museum.

All three sites had institutional project goals to expand their audience to new demographics and/or bring people physically into the museum space. At Worcester, summative evaluations stated the goal this way: "Administrators believed interactive exhibits would increase audience interest and attendance" and "Their focus is to engage a wider audience while accommodating their current clientele."

The Frye hoped to reach new audiences and bring people physically into the museum. One participant said, "They always wanted to reach a different demographic and hope that that translated into membership or some sort of investment in the institution." Another participant

added that a goal was "just connecting younger people in general." Additionally, the museum had a goal of bringing people physically to the space. According to one participant, "Beyond getting the collection online and widely distributed through the internet, we wanted to translate that into people coming into the museum." Another participant added an even more specific goal in this area: "We were really hoping that people would come find their names on the wall."

FAMSF's goal focused on bringing people to their space, specifically getting people to return. A participant noted, "It was doing what it's supposed to. It's keeping me wanting to go back." Additionally, the museum had a very specific target audience, as stated in the summative evaluation of the app's beta release: "The target audience for this app is adults and teens with smartphones. Another intent is that groups can also facilitate this experience with younger children."

Increasing engagement and interaction.

This goal of increasing engagement in museum spaces was also articulated by all three sites. It was a pretty straightforward goal for all of them to have an increase in interaction. At Worcester, one of their evaluation reports stated, "To promote interactivity, iPads […] were placed within updated galleries." A Frye participant stated that "High volume [of participation] was one of the goals." Finally, at FAMSF, a participant put it this way: "We invited different communities to come in who then supported that, kind of like those test groups, and all of this in the hope that we would get a lot of community engagement."

Gathering data and information about audience.

The Frye and Worcester both had institutional goals to collect some sort of information about their audiences. At Worcester, a participant stated, "We want to be able to capture whether

or not our educational initiatives are effective." At the Frye, this goal was more expansive, to collect demographic information about their audience. One participant stated,

> "So we started thinking about how we're gonna do this. How we could have a large group of people decide what was hanging at the Frye with the least amount of barriers to access and still get their information, learn about who they are, so that we could include them in the exhibition in some way. It was Civilization that was like, as we were throwing around ideas, they were saying what if we just used social media, because then people's names and where they live and where they work, like you get so much demographic information about people."

Another participant stated about the goal, "I think there had been some hope that there might have been additional data that could have been mined."

Adding technology.

At FAMSF, adding technology was not only a motivation that lead to the project, it was also a stated institutional goal. A participant stated, "The institutional goals were not really that deep. They were very much so that 'Oh, we need to have some type of new technology that we can point out.'" This participant brought up the pressure to add additional technology of some kind multiple times during the interview.

Increasing the museum's visibility.

The Frye also had an institutional goal that was unique from the other sites of increasing the museum's visibility. A participant from the Frye listed "visibility of the museum in general" in response to the line of questioning about institutional goals. This goal was mentioned in relation to expanding the museum's audience.

Visitor Outcomes.

Intended visitor outcomes emerged around four of the five Generic Learning Outcomes (GLOs) across the three cases. Two of the GLOs were themes for all cases: 1) Knowledge and understanding; and 2) Activity, behavior, progression. The other two GLOs that emerged as

themes were shared by just two of the cases: 3) Attitudes and Values and 4) Enjoyment, inspiration, creativity.

Knowledge and understanding.

Across all three sites, desired visitor outcomes related to knowledge and understanding about art were articulated. At FAMSF, the summative evaluation for the app clearly stated knowledge and understanding as an intended visitor outcome: "Another objective of this app is for audiences to learn about sculpture and art from using the app."

At Worcester, there was a similar clarity about knowledge and understanding being a primary visitor outcome, if not the highest priority visitor outcome for the museum. A participant stated, "We expect that visitors will leave with the correct information about what they are looking at" and "Basically it fulfills our educational goals of folks understanding why artworks are in the configuration they're in, what they're by, what the titles are, the year and so on."

At the Frye, the knowledge and understanding outcome was stated as a desired outcome, but less primary than some of their other visitor outcomes. A participant from the Frye stated, "There were still opportunities to offer some sort of background so the hope is all those people who really were into the peacock would maybe then have the opportunity to learn something about the peacock."

Activity, behavior, progression.

All three sites also articulated intended visitor outcomes around encouraging visitors to look closely at art, which is either an activity or a behavior in terms of the visitors' learning. At Worcester, staff hoped that offering information in the contained format of the iPad would mean that the technology would support the curatorial goals of the space "to encourage looking over reading, and to force visitors to consider the object groupings." A participant also stressed, "We

want the visitor to focus on the art." Additionally, a participant articulated the goal around what they hope visitors would write in the labels they contributed: "People can write their own labels based on what they see."

At the Frye, this learning outcome was also articulated although not heavily emphasized. A participant stated, "Trying to make the link later on from this 'Hey, do whatever, do you like these images? Like em, if you like em.' […] To then actually spending time [with the art]."

FAMSF was very clear that encouraging people to look closely at the art was one of their intended learning outcomes. This outcome was demonstrated twice in the evaluation of the app: "One goal of this app is for audiences to observe art closely while discovering new methods of looking at, appreciating, and learning about sculpture, as well as art in general" and "Another goal is for people to look at their phones less often while using the app in order to distract less from looking at and engaging with the artwork." One of the participants articulated this outcome in a slightly different way:

> "You need to slow down and we were trying to figure out how to get people to just do that and whether or not the app invited you to do that as a kind of prerequisite. It's like this is not about a normal experience, just slow down. We were thinking about well, let's connect with the slow art community."

Attitudes and values.

Two of the three cases had intended visitor outcomes around attitudes and values. Both sites wanted to empower visitors to feel that they had something to contribute to the space and the interpretation. Both FAMSF and the Frye intended for visitors to walk away with a sense that they could contribute in a meaningful way to the conversation about art in those spaces.

At the Frye, this learning outcome seemed to be a slightly higher priority than the previously mentioned outcomes. One of the study participants said,

> "Well, I suppose, you know just feeling more like a participant, instead of just being a recipient of information being given to them in a didactic way. Instead it was taking away all of that and saying hey what do you think about this or feel about it, so maybe that's a sense of empowerment to them."

A participant emphasized how the interactive elements could encourage visitors to be involved: "Having the live feed meant that people who had missed the voting could still come in and be part of the exhibition by having the screen in the galleries."

FAMSF really emphasized this visitor learning outcome as well. Participants reiterated the intended outcome a couple of times. One staff member said, "I wanted to give the visitor this empowerment to think 'Wow, look at these other visitors. Their comments are just as insightful as, say, the curators. I too can have my own opinion and comments.'" Another participant put it this way:

> "Voices is really what it's about as far as the elements of enthusiasm, excitement, and just experience. Like 'I'm having this experience and it's valid and I can tell it and people will listen and it's as valid as any curator who can tell me all this other stuff, but like my experience in the moment of looking at this object, feeling what I'm feeling, what I see, how it looks in the light, how it…you know.' My experience is just as valid and that I think is huge […]."

This attitude and value based learning outcome was very clear for FAMSF.

Enjoyment, inspiration, creativity.

This visitor learning outcome was shared by two of the sites. The Frye and FAMSF, again, both articulated that they wanted visitors to enjoy their experiences of the technology-based, participatory elements and enjoy the art they saw.

Participants at the Frye were very clear about this intended outcome. One said, "I just wanted it to be fun. […] I just wanted this thing to be weird and fun." Another participant connected this visitor outcome to also empowering the visitors:

> "I think we wanted art to feel like playful and just something that anyone could understand. You didn't need any knowledge of what you were looking at to

> appreciate an image. And if there's any platform that surely people feel like they can just fling their opinions around on about anything its social media."

At FAMSF, this visitor outcome was articulated in the evaluation of the app as well as by study participants. In the summative evaluation, the goal was stated as "for people to enjoy the experience of using it while being able to use it efficiently." One of the participants said the team members wanted "to excite and engage and charm and do something different."

3) How does the implementation of technology-based, participatory experiences for visitors influence or change exhibition development practices within museums?

To answer this question, the researcher asked interview subjects about internal dynamics while working on the projects, how implementing the project went, how they felt about the inclusion of visitors' contributions in the gallery spaces as well as whether they thought their museum would include opportunities in the future for visitors to contribute to interpretive content, and whether they thought the implementation of the project had any impact on the ways in which their museums think about and/or engage in exhibit development. While the answers varied somewhat from site to site, participants' responses seemed to suggest that the participatory elements had little or no impacts on exhibit development practices.

At FAMSF, study participants did not think that the project had influenced the ways in which the institution thinks about and engages in exhibit development. Participants remained interested in pursuing the inclusion of visitors' voices though. At the Frye, participants either did not think that the project had influence exhibit development or they could not say because they no longer worked at the organization. Participants continued to think visitors' voices would be featured either because they had a personal commitment to it or they saw it as a trend in museums. At Worcester, the participant responded that the project had influenced the way they thought about exhibition design but they had also used technology in very similar ways before

the installation of the iPads in the [remastered] galleries, so it seemed that this particular project may not have been the catalyst for that change.

One theme consistently emerged across all three sites, a commitment to alternative voices and perspectives, and two more themes emerged across two of the sites, balancing different voices and the influences of personnel changes on projects like these.

Commitment to alternative voices and perspectives.

Despite the lack of evidence that these projects change the way museums think about exhibition planning, participants across the sites showed a commitment to bringing in visitors' voices and perspectives. At Worcester, a participant reflected on the inclusion of visitors' contributions:

> "The fact that visitors can contribute their thoughts, I think, was a valuable experiment. I think that we still need to do a bit more work as far as what questions we ask, how it's framed. Maybe there's something that helps lead people to writing a lengthier comment, or maybe it should be video recordings. I don't know so we need to think about ways to achieve that goal."

The participant also added that "Content submission is definitely something that we'd like to think about."

At FAMSF, the project leader, who had previously stressed how important including visitors' voices were to the project, stated a continued interest in getting that aspect of the project right in the future. The participant said, "I'm still looking for the right way to make that happen."

At the Frye, while there were unsure feelings about whether the project had changed exhibition development, participants did express that there was increased social media interaction moving forward. One participant noted, "I do think that after that things kind of changed, after you have an exhibition where you are explicitly asking people to have their phones out, it's hard to ask them not to after that." Another participant agreed,

> "We got people to post more about the Frye than they ever had. I think, again, like [the other participant] said, once that was a thing it carried forward. The exhibitions afterward became more and more photographed. From that point forward we always had a very specific tagline for every show. Maybe we did before as well, but it became used more."

Balancing different voices.

Two of the museums noted that on top of having a commitment to those alternative voices, they also felt strongly about balancing those voices and the curatorial or museum voice as they move forward. The Frye and Worcester showed this theme while FAMSF did not.

At the Frye one of the participants summed up that balancing different voices should be examined on a case by case basis,

> "So I think with shows like this, museums are already trying to balance the voice of the museum with the voice of the visitor and it's just tricky and I think it has to be looked at on a case by case basis and I think for this show we just went whole hog more on the citizen curator social engagement component, to look at that as almost as purely as possible without distracting with all this other stuff that we've been introducing or reintroducing for years."

With this project, the participant felt comfortable only highlighting visitors' voices because the artwork are pieces that the museum has been displaying since it was founded.

At Worcester, the perspectives of the visitors were considered along with other alternative voices that the museum had already invited into the gallery spaces. A participant stated, "Maybe it's too much of an assumption to say that we think visitors are craving different perspectives, but we certainly like to be able to include that where possible. That we aren't just devoted to one curatorial voice."

Influences of personnel changes.

At two of the three sites, the influence of personnel changes on the future of technology projects and visitor contribution driven projects emerged as a theme. The participants at FAMSF and the Frye emphasized how much staffing affects the progress and continuation of these types

of projects. There were staff changes during the course of the FAMSF project as well as additional staffing changes after the project. One of the participants spoke about how support for a project is effected by personnel change:

> "It's just that the necessary support from an institution to do anything like this has to be from the ground up. […] And for awhile there they had a real intent to do it and then it sort of fell off as people left or directors come and go and IT people come and go […]."

The same participant mentioned that there had been some talk of future plans for a similar project, elaborating,

> "Ultimately, they wanted to bring this whole thing into the museum, they wanted this to be the flagship for a larger project of doing this kind of a thing in the museum. And there was a lot of support for that, but the personnel, the people didn't follow through on that."

Another participant spoke of the current environment: "I think it was a good experiment, and at this point, it's so much a matter of internal politics and institutional priorities. So now we have a new director, who comes with a super, super, super robust list of his own priorities."

At the Frye, there has been a lot of staffing changes since the *#SocialMedium* exhibition, including the director of the museum, as well as two of the study participants. Participants who no longer work at the Frye, as well as those that still do, expressed uncertainty about the future of similar projects because of those personnel changes. One of the participants that had left the Frye stated, "At this point, hardly anybody works there that used to work there during this time, […] So hard to say [whether the project influenced the way the museum engages in exhibition development]." As for the participants that still work at the museum, one of them responded to the question of whether the museum would include opportunities for visitors to contribute interpretive content in the future, by saying,

> "I would just assume so because that's the trend and because museums are always trying to engage new audiences, younger folks, that are more inclined to do that,

> but I don't know yet if the new leadership of the museum is gung-ho about that or looking at it."

Another current employee participant stated, "It seemed […] like a one-off experiment, but and there might be other reasons why that hasn't, whatever momentum that might have created sort of petered away because there's been a lot of personnel changes."

4) What is the nature of the visitor response and content contributed by visitors to the exhibit through participatory, technology-based platforms?

To answer this question, the researcher spoke to participants about their expectations about contributions versus what was received from visitors and about their interactions with visitors utilizing the technology. The researcher also relied heavily on summative evaluations received from the sites. Finally, in order to characterize the content contributed by visitors the researcher reviewed a subset of visitor contributions from each of the sites.

Visitor response.

When characterizing the nature of the visitor response to these experiences, three themes emerged: 1) limited visitor contribution; 2) generally positive visitor response; and 3) technology issues.

Limited visitor contribution.

All three sites saw what they considered to be low rates of contribution compared to what they wanted, although there were varying expectations among staff members. At FAMSF, one of the participants noted that "we had to really solicit the contributions." The museum's summative evaluation of the app found that only 26% of the subjects who used the app chose to record a contribution in the app.

At the Frye, their evaluation showed that "Visitors who knew how to engage with the exhibition online expressed little interest in doing so. Fewer than 10% visited the URLs, which

led to more user-generated comments." Additionally, only 47 of the 100 people interviewed were aware of the crowd-sourced audio tour and only 12 of those people knew that they could contribute but all chose not to. One person interviewed did come to the exhibit specifically to record something for the audio tour. In terms of the monitor with the social media live feed of visitor contributions the evaluation found,

> "Thirty-six percent of visitors (n=83) said they noticed the monitor, and of those, 48% (n=31) said they stopped to look at its content. All fifteen had positive responses to the monitor, but only five were able to identify the monitor content as containing a live feed."

At Worcester, their evaluations did not look specifically at the visitor contributions, but one of the participants shared some insight about their expectations:

> "I think we expected more people to talk a lot about what they saw, meaning like write a visitor label. We expected that to be really rich content and something that the public wanted to give us, but that didn't really pan out, so those type of entries are very minimal and visitor comments like one word comments like "stupid" or "beautiful" or "I had fun today" those were frequent. We have a lot people just wanting to leave the bare basics. It didn't get that in-depth feedback that we were hoping for but it proved that people were in fact reading something."

Generally positive visitor response.

Despite the limited number of visitor contributions, all three sites had generally positive feedback to the technology. Evaluation data from all three sites was used to assess the visitor response. At Worcester, one of their evaluations indicated that "Of the 15 patrons who used the iPad, 73% found it easy to use. The majority of visitors who used the iPad were able to find the painting description they were looking for."

At the Frye, their evaluation indicated that visitors had a rather positive response to the visitor contributed interpretation and the show in general. According to the evaluation, 44% of the visitors said that the visitor contributed label comments were their favorite part of the show and "almost half of visitors (47%) could not identify a least favorite aspect of #SocialMedium."

Additionally, visitors "were asked how they felt about the social media comments, and responses were coded as either positive (n=131) or negative (n=44)."

Finally, FAMSF's evaluation also showed a generally positive response to the app, although there was some negative response which will be discussed further in the next theme. The evaluation indicated that "42% of participants rated their overall experience using the app as 'Very Satisfactory' and 30% of participants rated their overall experience using the app as unsatisfactory" when asked to rate their overall experience with the app. The evaluation concluded, "This data indicates participants' overall positive response of the app concept as well as unique features of the app such as the varied perspectives and the 'Explore More' feature."

Technology issues.

The evaluations for all three sites noted at least one technological malfunction observed by visitors. At the Frye, some of the URLs listed on the wall labels were broken and of the seven visitors that attempted to visit them five reported that the pages would not load. One of the evaluations at Worcester mentioned the iPads malfunctioning while the researchers were gathering data. The researchers observed that during two of the five days they were gathering data, "the iPads in the gallery were experiencing technical issues." The evaluation asserted that,

> "Many visitors attempted to engage with the exhibit with the iPads. During both weekends we spent in the galleries, however, the iPads malfunctioned. No staff was available to debug them. Visitors became frustrated and nearly three quarters of the patrons would leave the gallery altogether."

FAMSF had a more significant set of technological issues because their evaluation was of a brand new piece of technology that was also in its beta testing phase. When subjects were asked "What was most memorable about this experience?," usability issues was among the top three responses.

Visitor contributions.

Visitor contributions from the three sites fell within one of eight types of contributions. While the museums' prompts may have influenced the type of response a bit, two of the three sites' prompts were very general, and responses from the site with specific prompts did display multiple types of contribution. Five of the eight types of contributions appeared at all three sites, while another two of them happened at only two sites. One type of contribution happened at only one site, likely because of the nature of how visitors contributed their content.

FAMSF, the Frye, and Worcester all witnessed value judgements, personal preferences, comments relating to the person's life, observations, and comments evoking an emotion or sentiment. Value judgements were statements related to the qualities of the artworks such as "It's a beautiful sculpture reminiscent of Giacometti and in a perfect position in the sculpture garden" or "These prices [sic] suck." Personal preference contributions communicated the contributors' personal likes and dislikes: "At the #Frye today this was my 3YO's favorite painting because it features lots of monkeys. #socialmedium" (accompanied by a photo of a person with a child on their shoulders next to a painting of monkeys) or "I like this very much."

Contributions where the person related the art to their life often looked like this: "Pray for snow. It makes me wish I was in the mountains now. #socialmedium" (comment was attached to a photo of a painting of snow on a riverbank) and "I'm not exactly sure what I notice about this piece, but I do know that every time I go to the café for lunch I want to sit at the window so I can stare at it." Observations about the art were common across the sites including contributions like these: "The background landscape does not look Venitian [sic]. Added? Changed?" and "First notice in contrast to the soft shapes of the blue part of the safety pin and the soft curl, the sharp point at the edge sticking out into the air."

Contributions where the person evoked an emotion or sentiment were slightly less common, but featured interesting comments like “This piece is calming with its pink salmon color, but also at the same time a little bit scary. You can’t see who’s around the corner and you keep walking in a circle” and “Finally, I can share my love of the content and happy ducks with the world! @FryeArtMuseum #socialmedium”

Some contributions at FAMSF and the Frye were categorized as relating to popular culture or cultural touchstones. Examples of this type of contribution were, “The yellow apple reminds me of the story of Snow White where she ate the apple given to her by the witch” and “'Seascape w/ Figures' by Dubovskoi #SocialMedium aka 'Awaiting the Next Amazon Drone Delivery' @fryesocialmedium” (accompanied by a photo of two people looking at a painting of two people sitting on rocks looking out toward the sea).

At the Frye and Worcester, some contributions were a response to the interactive element itself. These comments were very common at the Frye and not as common at Worcester. The following is an example of a Frye contribution praising the interactive element: “#socialmedium @ the Frye Art Museum, great concept!” (paired with a photo of one of the paintings in the show). At Worcester, a contribution of this type was this one: “Wonderful presentation and points describing each persdon's [sic] point of view on this painting. Thanks.”

Finally, at the Frye they received a substantial number of contributions which could be categorized as visual only because they either had no comment at all attached to the photo other than the show’s hashtag, or the only comment with the photo was the information about the artist and painting. Because neither of the other sites had visual aspects to their contribution systems, this type of contribution was only possible at the Frye.

Chapter 5: Conclusions & Implications

The purpose of this study was to explore museums' use of technology-based, participatory experiences designed to encourage visitors to contribute interpretive content in art museum exhibitions. The study was guided by the following four research questions: 1) What are museums' motivations for implementing technology-based, participatory experiences for visitors in their exhibitions? 2) What are the institutional goals and intended visitor outcomes for these experiences? 3) How does the implementation of technology-based, participatory experiences for visitors influence or change exhibition development practices within museums? and 4) What is the nature of the visitor response and content contributed by visitors to the exhibit through participatory, technology-based platforms?

Data were collected through interviews with museum professionals that were involved in the planning and implementation of technology-based, participatory experiences, document analysis, and visitor contributions at three case study sites. This chapter describes conclusions from the study and implications for further research and for professional practice.

Conclusions

What are museums' motivations for implementing technology-based, participatory experiences for visitors in their exhibitions?

Across the three case study sites, four motivational themes emerged. Sites were motivated by a desire to enhance the visitor experience, to keep up to date with general technology use or technology used among museums, to try new things, and to offer visitors alternative perspectives to the traditional curatorial voice. Two sites also displayed a fifth motivational theme of breaking down curatorial authority and empowering visitors.

These motivations are interesting as other studies have not recorded initial motivations, rather focusing on institutional goals and intended visitor outcomes (AAM, 2012). Individual institutions' have noted motivations related to their technology experiences such as meeting visitors' needs, trying something new, and cultivating new audiences (Sayre, 2015; Sternbergh et al., 2015). Based on these other institutions' reported motivations, it seems that offering visitors alternative voices was a unique motivation to this type of contributory experience.

In these sites, it is notable that some motivations developed into clearly stated goals in the development of these experiences while others did not. The core of museum motivations do seem to translate into either stated institutional goals or intended visitor outcomes according to the data.

What are the institutional goals and intended visitor outcomes for these experiences?

Two institutional goals were shared by all three institutions: expanding their audience and/or bringing visitors physically into the museum and increasing engagement and/or interaction in gallery spaces. Two sites also had a third goal of gathering data or information about their audiences. Additionally, two sites had goals that were not shared with any other sites of adding additional technology and increasing the museum's visibility. While the sites' goals emerged through interview questions, the sites did not have clear planning documentation that laid out goals with indicators of success for those goals.

According to AAM's Mobile in Museums study (2012), the top three goals of mobile programs expressed by the participants were increasing visitor engagement, meeting visitor demand for mobile technology, and marketing or word of mouth about the museum. This shows that there is definitely overlap when it comes to institutional goals for mobile experiences generally and for technology-based, contributory experiences.

When it came to intended visitor outcomes, two themes showed up for all three sites: Knowledge and understanding; and activity, behavior, progression, which in this case was looking closely at art. Beyond these two outcomes, two more emerged at two sites each: attitudes and values, around feeling empowered to contribute; and enjoyment, inspiration, creativity. These trends align quite closely with AAM's Mobile in Museums study (2012) finding that two of the top three intended visitor outcomes for mobile experiences were increased learning and a greater sense of engagement. Other institutions have also articulated goals similar to these, including the Cleveland Museum of Art's primary desired outcome of empowering visitors (Alexander et al., 2013).

How does the implementation of technology-based, participatory experiences for visitors influence or change exhibition development practices within museums?

The data in this study suggest that the implementation of these experiences does not dramatically change, if at all, exhibition development practices in museums. However, the data do point to some subtle changes in practice. Participants gave examples of how they maintained prior commitments to alternative voices and perspectives, they thought deeply about balancing different voices in their museums, and articulated that personnel changes influence these types of projects heavily. These results seem to indicate that those who feel strongly about the inclusion of visitors' voices and using technology to do so may continue to be committed to those things no matter the outcome of their projects. On the flipside, the planning and implementation of these experiences do not seem to drastically change the feelings and opinions of staff members that do not have strong commitments to visitors' voices or technology integration. Institutional buy-in and internal cooperation have been noted as important to the success of technology

implementation in the past, and they are no exception in the case of these technology-based contributory experiences (AAM, 2012; Sayre, 2015).

What is the nature of the visitor response and content contributed by visitors to the exhibit through participatory, technology-based platforms?

All three sites mentioned having lower visitor contribution numbers than they had wanted. Evaluations at two of the sites showed contribution rates between 0% and 26% of visitors surveyed. These numbers echo Nielsen (2006) and Li and Bernoff's (2011) numbers showing relatively small portions of people online creating their own content. Despite the lower than desired contribution numbers, all three sites saw positive feedback to the technology experiences. The higher numbers of "lurkers" and "spectators" shown by Nielsen (2006) and Li and Bernoff (2011) indicate that people like to consume what other people create on the social web, even if they do not contribute themselves. All the sites received positive feedback specifically about the inclusion of other voices in the museum. This seems to indicate that while not all visitors will contribute, they appreciate experiencing other visitors' voices in museums. This is a positive outcome of contributory experiences although the sites may not have thought of it as readily as the benefit they anticipated from visitors contributing themselves. Simon (2010) actually emphasizes this positive aspect of contributory experiences: "Audience members may feel more personally included in the institution when they see 'people like them' represented" (p. 227).

The third theme that emerged around visitors' responses to their experiences was technological issues. Technology not functioning properly was mentioned at all three sites. This is not entirely surprising as internal resources, maintaining mobile technology, and technological

expertise have previously been found to be significant challenges for museums with mobile technology (AAM, 2012).

When it comes to the nature of visitor contributions to technology-based, participatory experiences, five types of visitor contributions appeared across all three sites: value judgments, personal preference, relating the art or experience to the person's own life in some way, observations, and evoking an emotion or sentiment. A sixth and seventh type of contribution were made at two of the sites: relating to popular culture or cultural touchstones and responses to the interactive element itself. Finally, a very prevalent type of visitor contribution at one site was the visual only contributions. This experience was the only one that allowed for visual contributions, while the other experiences allowed for either text or audio contributions, not visual ones.

The types of visitor contributions that emerged are excellent examples of the potential of digital media experiences laid out by Falk and Dierking (2008). The two wrote, "Digital media experiences have the potential to effectively situate the visitor's museum experience within the broader context of an individual's life, community, and society" (p. 28). That visitors made contributions that expressed their personal preferences, related the art or experience to their own lives, evoked emotions, and related the art to popular culture or culture at large illustrates that these experiences did effectively situate visitors' museum experiences within their own contexts.

Implications

This research offers implications for further study as well as practical considerations for professionals in the field. While this study focused on technology-based, contributory experiences in art museums specifically, research at other types of cultural institutions would paint a fuller picture of the field at large and the place of these types of experiences within it.

Research into what types of contributory experiences encourage the most participation by visitors could be a next step and would provide practitioners with a wealth of useful information for planning future experiences.

Finally, the results of this study suggest a need for further study of what these technology-based, contributory experiences mean for visitors. While individual institutions have done evaluations of their own projects, a study looking across multiple institutions at what visitors get out of being able to contribute interpretive content in museum settings would be useful and would reinforce whether professionals' expectations of what visitors get out of these types of experiences are valid.

In practical terms, this study highlights the work to be done around institutional and staffing buy-in to visitor focused technology projects. Both Sayre (2015) and the Mobile in Museums study (2012) emphasize the importance of institutional consensus and cooperation needed for the success of technology projects. This study also offers opportunities for museum professionals to think about clearly defining their institutional goals with measurable indicators so that they can be clear about how successful their project was at meeting those initial goals. The sites discussed here did not clearly articulate indicators of success for their institutional goals. Finally, the results of this study are encouraging for professionals seeking to incorporate visitors' voices into their exhibits and indicate that while not all visitors will contribute, these types of experiences generally receive positive responses from visitors.

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Appendices

Appendix A: Interview guide

[consent talking points]

These first questions are about the planning and installation of the [name tech-based participatory experience].

1. What was your role in the planning, implementation, and/or running of the technology-based participatory experience?
2. What were the institutional goals for this project?
3. Did your department have additional goals for this project beyond the institutional ones? What were they?
4. Walk me through the early conversations that lead to the decision to plan and install the experience.
5. What were you hoping this project would do for visitors?
6. What did you think people would gain from interacting with this technology?
7. Why did digital technology seem like the best way to implement this interactive? (as opposed to comment cards or a post-it wall, etc.)
8. Thinking about internal dynamics, what was most rewarding about working on [name tech-based participatory experience]?
9. And what was most challenging about working on the [name tech-based participatory experience]?

Now I have just a couple questions focusing on the time during which the [name tech-based participatory experience] was/is in the galleries.

10. How does the number of visitor contributions compare to your expectations of what that volume would look like?
11. Have you or other staff members heard feedback about the experience from visitors? What did you/they hear?

In this last part of the interview, the questions focus more on reflecting on the project as well as looking toward future practice.

12. What do you think worked best about the [name tech-based participatory experience]?
13. What was most challenging about [name tech-based participatory experience]?
14. Do you think the implementation of [name tech-based participatory experience] has had any impact on the ways in which your museum thinks about and/or engages in exhibit development? If not, why not? If yes, describe those impacts.
15. Do you feel there was value added to the gallery experience by the inclusion of visitors' contributions? Please tell me about that.
16. Do you feel anything was lost by including visitors' contributions in the gallery space? What?
17. Will you include other opportunities for visitors to add interpretive content in future exhibits? Why or why not?

18. Finally, are you willing and able to share documentation related to the planning, implementation, and evaluation of the [name tech-based participatory experience], such as exhibit plans, interpretive plans, institutional analytics or numbers, and/or evaluation studies?
19. Would you also be able to share the visitor contributions gathered through the tech-based interface with me?

Appendix B: Coding Rubric

RESEARCH Q1
What are museums' motivations in implementing technology-based, participatory experiences for visitors in their exhibitions?

Theme	**FAMSF**	**Frye**	**Worcester**
Enhance visitor experience	"We thought 'this is great' and we just loved the idea of people not having to look at their [device], and not having to punch numbers in and just being able to have this **magical experience**." "a very important goal of transformative experience"	"we wanted it to feel more immersive like you were inside one of these portals, and that you were inside this dynamic type of online social engagement setting." "Bringing the art to the people. Kind of, instead of asking people to come to the art."	"Big picture about what we think about these touch interactives in the gallery are that **they give the visitor more depth, more content if they choose to seek that out**. Basically, it's there for them so in a way we expand on that traditional wall label and give more content and more information via the iPad."
Keep up to date with other museums' or general tech use	"we had a new director of information technology, and he felt compelled that we did need to do something new with technology because in our case it's really been quite this interesting conundrum that we're right here in the heart of Silicon Valley, yet we're not as an institution by any stretch of the imagination, a forerunner in technology."	"LACMA was doing really cool [Snapchat] posts at the time […] just really kind of sacrilegious things with their images, so we were like 'We wanna be like them.'"	"One goal that's kind of an unwritten and unstated goal is certainly **to keep up with what other museums are doing**." "it was very important for us to make sure that visitors who have come to expect technology in the galleries, and expect being able to have information at their fingertips about what they're looking at, that we move forward with some kind of technology solution. We've found that it works in certain cases but not

			others."
Try something new	"They were interested in exploring new ideas, how could they try something that was fresh and new and utilize newer technologies that could help them move forward and express what is needed in museums, which is to step outside the normal scope of permanent collection audio tours on a normal device that follows a cookie cutter delivery mode." "'reinventing' the audio tour kind of thing"	"Well, from what I understood, it was to crowd-source, **take away the traditional curator** from the show and **use social media platforms in a new way for the museum.**" "After sixty-two years of displaying the Founding Collection, Frye staff was looking to help visitors find new ways to engage with this collection."	"It was important to us to have an interactive within those touch stations where visitors could either write their own label or just generally leave a comment about what they thought about the gallery and because [remastered] is really an experiment for us, we think of all our gallery spaces as laboratories of learning so we're just **trying different new things** when we can, it's a very different visitor experience and they wanna understand why." "The goal is to balance opportunities for quiet contemplation—the 'traditional' museum experience—with new interactive and experimental programs."
Offer alternative perspectives	"I felt really strongly about the community voices." "This combination of voices continues the Museums' tradition of encouraging art exploration as a conversation, not a lecture."	"It seemed like there was continued interest in seeing what it would be like to have this really expansive idea of the **citizen curator** come in and engage the collection. And just have a different lens into, it's like crowd sourcing right, what type of additional	"that **alternative voice**, so you aren't reading this very dry art historical lecture type, 150 word write-up about the piece, but some people might want to come at it from the student **perspective** or a philosophical perspective, or we had members of the clergy talk

		information do crowdsourcing get, do we get into peoples' view of the collection."	about one object within the gallery that has religious content. We found those varying views were very helpful in interpreting these works in a different way."
Break down authority/ Empower visitors	"For me one thing that was really important too was for other people to see that, other museum visitors to understand that their voices and their interpretations are valid" "I don't think the institution really particularly cared that people could add their own voices. That was my priority; it wasn't anyone else's." "breaking down the hierarchy of the museum voice. Creating a balance."	"I think one of the goals was to break down this idea of a hierarchy, that the curators are kings of the castle, ruling this space and sort of speaking down to the uneducated gallery visitors." "It's like giving everybody a freedom, kind of. Opening up a dictatorship or something." "we were trying to make citizens feel like curators"	

RESEARCH Q2
What are the institutional goals and intended visitor outcomes for these experiences?

Theme	**Sub-theme**	**FAMSF**	**Frye**	**Worcester**
Institution	Expand audience/ Bring visitors into the museum	"It was doing what it's supposed to. Its keeping me **wanting to go back**."	"We were really hoping that people would come find their names on the wall" "they always wanted to reach a different demographic and hope that that translated into	"Administrators believed interactive exhibits would increase audience interest and attendance." "Their focus is to engage a wider audience while accommodating their current clientele."

			membership or some sort of investment in the institution" "Just connecting younger people in general" "Beyond getting the collection online and widely distributed through the internet**, we wanted to translate that into people coming into the museum**."	
	Increase engagement/interaction	"We invited different communities to come in who then supported that, kind of like those test groups, and **all of this in the hope that we would get a lot of community engagement**."	"High volume [of participation] was one of the goals."	"To promote interactivity, iPads and touch objectives were placed within updated galleries."
	Gather data/information about audience		"So we started thinking about how were gonna do this. How we could have a large group of people decide what was hanging at the Frye with the least amount of barriers to access and still **get their information, learn about who they are**, so	"we want to be able to capture whether or not our educational initiatives are effective."

			that we could include them in the exhibition in some way. It was Civilization that was like, as we were throwing around ideas, they were saying what if we just used social media, because then **people's names and where they live and where they work, like you get so much demographic information about people**." "I think there had been some hope that there might have been additional data that could have been mined, but I'm not really sure that really came about."	
	Add technology	"The institutional goals were not really that deep. They were very much so that 'oh we need to have some type of new technology that we can point out.'"		
	Increase museum's visibility		"Visibility of the museum in general"	
Visitor Outcomes	Knowledge &	"Another objective of	"There were still	"We expect that visitors

	understanding – learn about the art	this app is for audiences to learn about sculpture and art from using the app."	opportunities to offer some sort of background so the hope is all those people who really were into the peacock would maybe then have the opportunity to **learn something** about the peacock."	will leave with the correct information about what they are looking at." "Basically it fulfills our educational goals of folks understanding why artworks are in the configuration they're in, what they're by, what the titles are, the year and so on."
	Attitudes & Values – Empower visitors	"Voices is really what it's about as far as the elements of enthusiasm, excitement, and just experience. Like **"I'm having this experience and its valid and I can tell it and people will listen and it's as valid as any curator who can tell me all this other stuff**, but like my experience in the moment of looking at this object, feeling what I'm feeling, what I see, how it looks in the light, how it..you know." **My experience is just as valid** and that I think is huge and that, regardless	"Well, I suppose, you know just **feeling more like a participant**, instead of just being a recipient of information being given to them in a didactic way. Instead it was taking away all of that and saying hey what do you think about this or feel about it, so maybe that's **a sense of empowerment to them**."	

		of platform, regardless of how its done, that including that is a huge step towards breaking down the hierarchy of the museum voice. Creating a balance." "I wanted to give the visitor this **empowerment** to think 'Wow, look at these other visitors. Their comments are just as insightful as say the curators. I too can have my own opinion and comments.'"		
	Enjoyment, inspiration & creativity – of the art & the experience	"Another goal of this app is for people to enjoy the experience of using it while being able to use it efficiently." "I really enjoyed working with [her] and her vision; she had a vision, she wanted **to excite and engage and charm** and do something different."	"I think we wanted art to feel like **playful** and just **something that anyone could understand**. You didn't need any knowledge of what you were looking at to appreciate an image. And if there's any platform that surely people feel like they can just fling their opinions around on about anything its social media."	

			"I just wanted it to be fun. […] But I just wanted this thing to be weird and fun." "I feel like online experiences are a dime a dozen but if this is a way to **bring people into the museum and create enthusiasm**, that's one of the outcomes that I was looking for."	

	Activity, behavior, progression - Encourage visitors to look closely at art	"One goal of this app is for audiences to observe art closely while discovering new methods of looking at, appreciating, and learning about sculpture, as well as art in general." "Another goal is for people to look at their phones less often while using the app in order to distract less from looking at and engaging with the artwork." "You need to **slow down** and we were trying to figure out how to get people to just do that and whether or not the app invited you to do that as a kind of prerequisite. It's like this is not about a normal experience, just slow down. We were thinking about well let's connect with the slow art community."	"Trying to make the link later on from this "hey do whatever, do you like these images? Like em, if you like em." Which was another one of the tag lines pretty much. **To then actually spending time**."	"we want the visitor to **focus on the art**"

RESEARCH Q3
How does the implementation of technology-based, participatory experiences for visitors influence or change exhibition development practices within museums?

Theme	**FAMSF**	**Frye**	**Worcester**
Commitment to alternative voices/perspectives	"I'm still looking for the right way to make [including opportunities for visitors to add interpretive content] happen."	"Cause I do think that after that things kind of changed, **after you have an exhibition where you are explicitly asking people to have their phones out its hard to ask them not to after that**. I think it was fulfilling in that way." "We got people to post more about the Frye than they ever had. I think, again, like [another participant] said, once that was a thing **it carried forward**. The exhibitions afterward became more and more photographed. From that point forward we always had a very specific tagline for every show. Maybe we did before as well, but it became used more."	"[Including opportunities for visitors to add interpretive content] has not necessarily come up outside of [remastered]. Just because that hasn't been necessarily our goal, although we're soliciting information from our public just all the time. **Content submission is definitely something that we'd like to think about**."
Balancing different voices		"I think museums are always **looking for ways to have people interact** with the exhibits and when did those things become sort of interpretive or are they critiques of the artwork or the	"Maybe it's too much of an assumption to say that we think visitors are craving different perspectives, but we certainly like to be able to include that where possible. That we aren't just devoted to

		exhibition, the curatorial conceit or something. Yeah, **I think those will always be considered**." "So I think with shows like this, **museums are already trying to balance the voice of the museum with the voice of the visitor and it's just tricky and I think it has to be looked at on a case by case basis and I think for this show we just went whole hog more on the citizen curator social engagement component,** to look at that as almost as purely as possible without distracting with all this other stuff that we've been introducing or reintroducing for years."	one curatorial voice."
Personnel changes influence	"Ultimately, they wanted to bring this whole thing into the museum, they wanted this to be the flagship for a larger project of doing this kind of a thing *in* the museum. And there was a lot of support for that, but the **personnel**, the people didn't follow through on that." "I think it was a good experiment, and at this point,	"At this point, hardly anybody that works there that used to work there during this time, […] **So hard to say**." "I would just assume so because that's the trend and because museums are always trying to engage new audiences, younger folks, that are more inclined to do that, but **I don't know yet if the new leadership of the**	

	it's so much a matter of internal politics and institutional priorities. So now we have a **new director**, who comes with a super, super, super robust list of his own priorities. So it's not like thinking about 'hmm, what old project that failed would I like to reexamine?'"	**museum is gung-ho about that or looking at it.**" "Yeah, I don't know, we've got **a new boss** now. We don't know what direction the new boss is gonna go in." "It seemed kind of, you know in retrospect, kind of like a one-off experiment, but and there might be other reasons why that hasn't, whatever momentum that might have created sort of petered away because there's been a lot of **personnel changes**."	

RESEARCH Q4
What is the **nature of the visitor response** and content contributed by visitors to the exhibit through participatory, technology-based platforms?

Theme	**FAMSF**	**Frye**	**Worcester**
Limited visitor contribution	"we had to really solicit the contributions." "The quantitative data indicates that 26% of participants chose to record using the "Speak" feature and 74% of participants did not to record using the "Speak" feature."	"Of the forty-seven visitors that were aware of the audio tour, twelve visitors knew they could contribute to the audio tour and chose not to. They gave reasons that fell within one of three categories: focused on the in-person experience (50%, n= 12), nothing to contribute (17%, n= 12), and other (33%, n= 12). One visitor specifically came	"I think we expected more people to talk a lot about what they saw, meaning like write a visitor label. We expected that to be really rich content and something that the public wanted to give us, but that didn't really pan out, so those type of entries are very minimal and visitor comments like one word comments like "stupid" or "beautiful" or "I

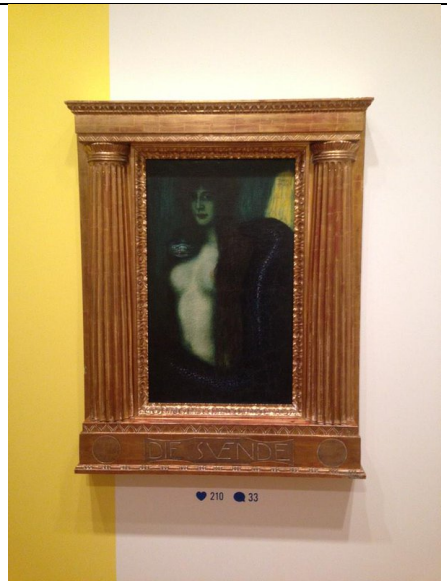
		to record an audio tour for #SocialMedium and said that she liked "the idea that you can record whatever you want, and people can laugh and think it's funny or take something away from it and learn about the art."" "Finally, the monitor at the entrance of the exhibition illustrated the use of the hashtag #SocialMedium by featuring a live feed. **Thirty-six percent of visitors (n=83) said they noticed the monitor, and of those, 48% (n=31) said they stopped to look at its content**. All fifteen had positive responses to the monitor, but only five were able to identify the monitor content as containing a live feed." "Visitors who knew how to engage with the exhibition online expressed little interest in doing so. Fewer than 10% visited the URLs, which led to more user-generated comments. The top reasons given for not visiting the URLs pertained more to the method of delivery than the content	had fun today" those were frequent. We have a lot people just wanting to leave the bare basics. It didn't get that in-depth feedback that we were hoping for but it proved that people were in fact reading something."

		itself."	
Generally positive visitor response	"Overall, this data indicates that 92% of participants agreed that their use of the app led them to look more closely at works of art and 4% of participants disagreed that their use of the app led them to look more closely at works of art." "42% of participants rated their overall experience using the app as "Very Satisfactory" and 30% of participants rated their overall experience using the app as unsatisfactory in response to the statement "Rate your overall experience using this app.""	"Almost half of visitors (44%) said the comments were their favorite aspect of #SocialMedium." "Almost half of visitors (47%) could not identify a least favorite aspect of #SocialMedium." "They were asked how they felt about the social media comments, and responses were coded as either positive (n= 131) or negative (n=44)."	"Of the 15 patrons who used the iPad, 73% found it easy to use. The majority of visitors who used the iPad were able to find the painting description they were looking for."
Technology issues	"The qualitative data indicates that 37% of the time (F=22), participants noted "Learning" in response to the question, "What was most memorable about this experience? Why?" 20% of the time (F=12), participants noted "Perspectives" and **20% of the time (F=12), participants noted "Usability Issues" in response to the question**. 15% of the time (F=9), participants noted "App Features" and 8% of the time (F=5), participants	"Of the seven visitors that did visit the URLs, five reported that the link was broken and they could not get a page to load. Of the remaining two visitors, one read other comments or added their own while the other did not."	"The interactive elements in the [remastered] gallery caught the attention of many patrons. During two of the five days we spent in the museum, the iPads in the gallery were experiencing technical issues. Taking that into consideration, 22% of patrons observed used the iPads. In our analysis, we accounted for the number of patrons that approached an iPad, regardless of its performance." "Many visitors attempted to

	noted “App Concept.””		engage with the exhibit with the iPads. During both weekends we spent in the galleries, however, the iPads malfunctioned. No staff was available to debug them. Visitors became frustrated and nearly three quarters of the patrons would leave the gallery altogether.”

RESEARCH Q4
What is the nature of the visitor response and **content contributed by visitors** to the exhibit through participatory, technology-based platforms?

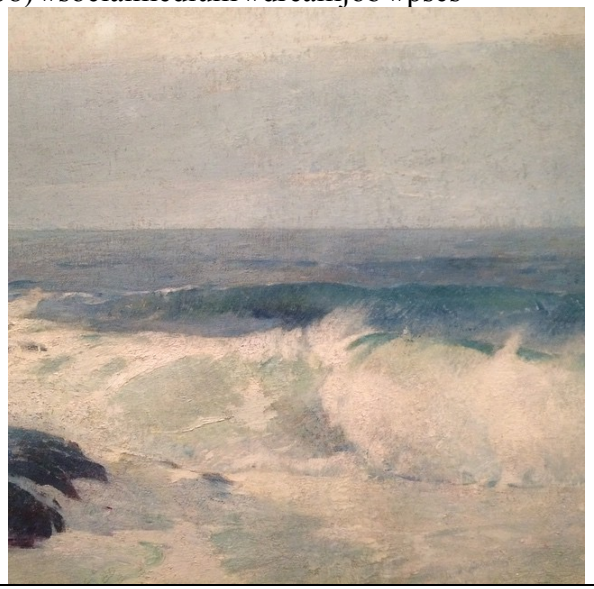
Theme	**Fine Arts Museums of San Francisco**	**Frye Art Museum**	**Worcester Art Museum**
Value Judgement	• This is the Stephen De Staebler sculpture the *Winged Woman Walking VI*. It’s a beautiful sculpture reminiscent of Giacometti and in a perfect position in the sculpture garden. • The first thing that I notice about this	 • So sensual. #socialmedium	• Very beautiful • Good • These prices [sic] suck

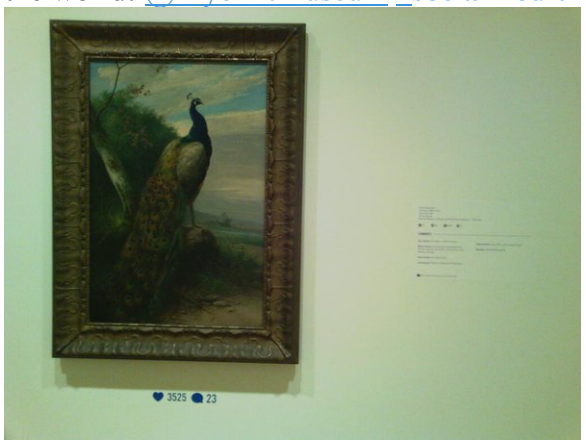
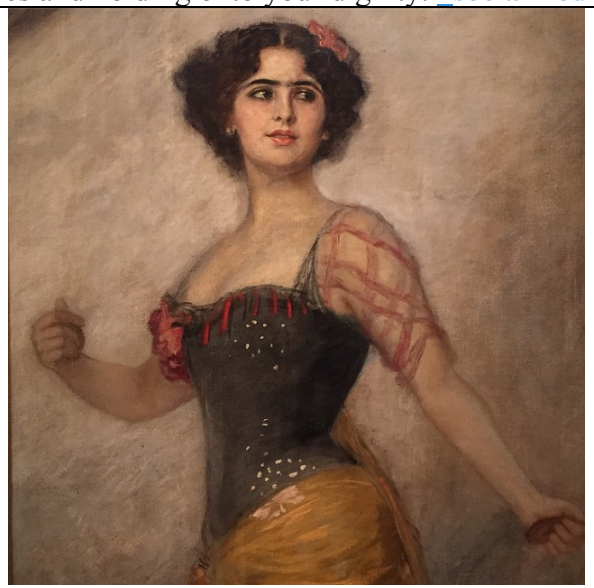
	sculpture is just how grotesque and distorted this face is. Almost like somebody has just punched a hole in this man's his face. And I then notice the crosshair on his forehead and the fact that he's almost on a gravestone. It's a very disturbing piece.	•  Oh so delightfully sinful! #socialmedium	
Personal Preference	• I'm standing in front of Louise Nevelson's sculpture *Ocean Gate.* It is towards the back of the garden and what I notice about it is that its kind of clustered, it's a bity busy, you really have to pay attention to the various details going on it. I do like it quite a bit.	•  My favorite after seeing the whole exhibit. #socialmedium	• I like this very much • Like this painting

	• The first thing I notice about *Corridor Pin, Blue* by Claes Oldenburg, is the blue head of the pin. To me it just screams pop art, and it's that pop art blue, and is just a wonderful contrast in this sea of green and often matches the hue of the sky, which I absolutely love. I'm drawn to it every time I come here.	•  At the #Frye today this was my 3YO's favorite painting because it features lots of monkeys. **#socialmedium**	

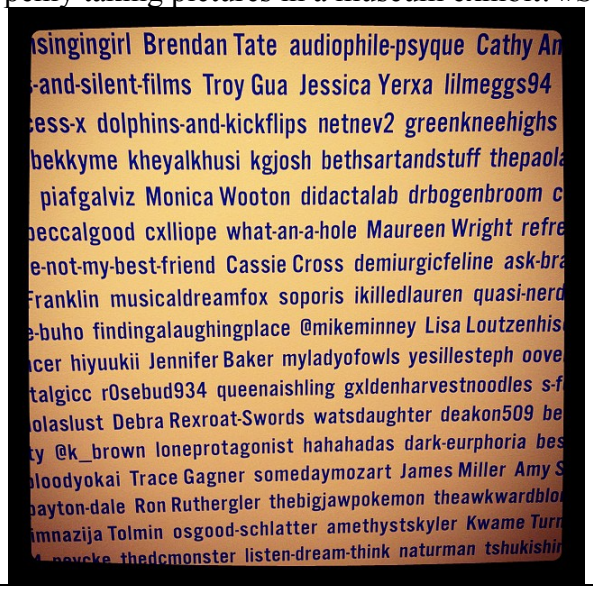
Relating to person's life	• I'm not exactly sure what I notice about this piece, but I do know that every time I go to the café for lunch I want to sit at the window so I can stare at it. Something about it reminds me of floating away. • The trees I can see between the metal of the museum reminds me of how little nature we have in big cities and how lucky we are to have such a thing like Golden Gate Park. • And my first observation about this space in general is that I love fall in San Francisco and the colors. And even though	•  So fluffy, like pillows! #socialmedium •  Pray for snow. It makes me wish I was in the mountains	• I love Michelle. I want to be a professor like her when I grow up.

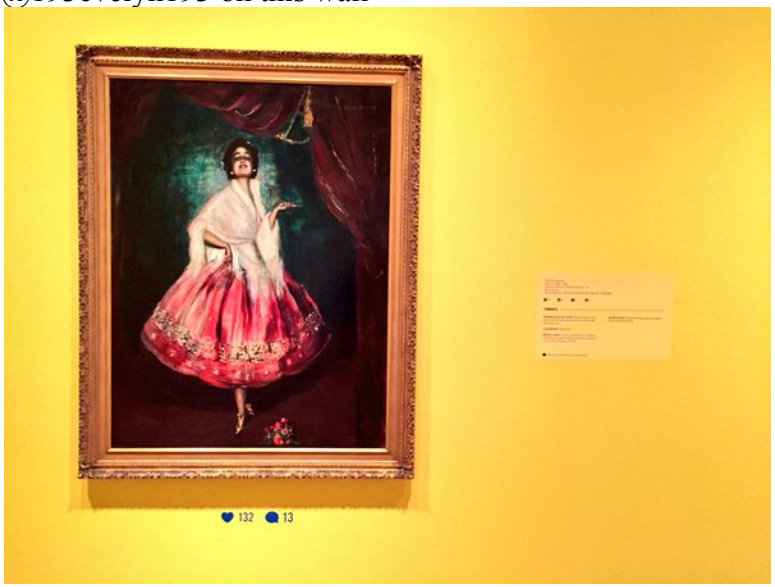
	there's music blasting in the background its music that I like. It sounds like a race is finishing up and they're trying to motivate the runners.	now. #socialmedium •  The kind of place I'd go with my travel buddy @reidmkoester #**socialmedium**	

Observation	• First notice in contrast to the soft shapes of the blue part of the safety pin and the soft curl, the sharp point at the edge sticking out into the air. • So when I first encountered this piece from far away, I thought oh they're all so realistic looking and so uniform in the way that they are kind of glazed. And then as I came closer I started noticing that some of the apples are in fact a lot greener and those were the ones that reveal the artifice of the piece.	•  Oh, Sin's got her eye on me at the Frye! (Franz von Stuck, 1908) #socialmedium #dreamjob #pscs • 	• Veronese shows Venus toying and teasing her son with his bow, quivered arrows not har away. Depicting the few moments before he leans far enou over to scratch her breast • The background landscape does not look Venitian. Added? Changed?

		The brushstrokes!!! #socialmedium	
Evoking emotion/sentiment	• This piece is calming with its pink salmon color, but also at the same time a little bit scary. You can't see who's around the corner and you keep walking in a circle	• Finally, I can share my love of the content and happy ducks with the world! @FryeArtMuseum **#socialmedium**  • @FryeArtMuseum this painting reminds me of being stoic in tough times and holding onto your dignity. **#socialmedium**	• Longing for freedom that comes with knowledge. Longing to not be afraid..
Relating to popular culture or cultural touchstones	• These three sculptures make me think of Sufi dancers, twirling and swirling around space. • The yellow apple reminds me of the story of Snow White where she ate the apple given to her by the witch.	 • Found Snow White at the Frye Museum #socialmedium	

		•  'Seascape w/ Figures' by Dubovskoi #SocialMedium aka 'Awaiting the Next Amazon Drone Delivery' @fryesocialmedium	
Response to interactive element		• 	• Wonderful presentation and points describing each persdon's [sic] point of view on this painting. Thanks,

		#socialmedium @ the Frye Art Museum, great concept! •  Yes! Openly taking pictures in a museum exhibit! #SocialMedium • 	

		Found my name at the Frye #SocialMedium exhibit. Now I just have to find @193evelyn193 on this wall  • Great social media curated exhibit in #Seattle @FryeArtMuseum **#SocialMedium** showed the power of ppl to define art.	

Visual Only		 • #socialmedium  • Alexander Max Koester, Moulting Ducks, c. 1900		