

Emerging Trends with Interactives in Art Museums

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A thesis
submitted in partial fulfillment of the
requirements for the degree of

Master of Arts

University of Washington

2013

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Program Authorized to Offer Degree:

Museology

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Abstract

This research explores the emerging trend of art museums incorporating interactives into their galleries. Literature suggests advantages to having interactives, such as enhancing the learning experience, making the art museum more family friendly, and giving visitors new ways to engage with art. The Denver Art Museum, Cleveland Museum of Art, and Columbus Museum of Art serve as case studies for the ways in which museums have implemented interactives into dedicated interactive spaces and the permanent collection. Interviews with museum professionals at each institution shed light on how the museum conceptualizes interactivity. Beverly Serrell's framework, "Assessing Excellence in Exhibitions from a Visitor-Centered Perspective," serves as a tool to explore how interactive experiences feel and look like from the perspective of a visitor. Analysis and discussion reveal the wide range of ways these three art museums have conceptualized and approached interactivity and what interactives look like in the museum. Emerging trends include the range of integration into the design of interactives and how that fits into the institutional approach to interactivity and the degree to which visitor studies and audience input in these cases influenced the direction of design.

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Chapter 1: Introduction to Research

1.1. Problem

“One of the most challenging problems” for art museums “is how to translate complex ideas about art and culture into interactive components that are accessible to young visitors” (Sousa, 2005). “Interactive design techniques are additive methods that supplement traditional didactic content presentation” and “interactive exhibits, when successfully executed, promote learning experiences that are unique and specific to the two-way nature of their design” (Simon, 2010). How are art museums conceptualizing interactivity and how are they implementing it? What does interactivity look like and feel like through a visitor-centered perspective?

1.2. Current Status

Some art museums in the United States have begun to create separate galleries that are focused on interactive experiences aimed at families with young children. In the art museum world these galleries are called dedicated interactive spaces. Interactive spaces in art museums can help to break down the public perceptions of the art museum as an elitist and family-unfriendly institution (Adams & Moussouri, 2002). These spaces are a good option for younger visitors because such experiences offer a new way to explore artistic concepts, and usually an experience that is catered to children and families. These dedicated spaces are often isolated from the rest of the galleries, confined to their own area in the museum. Within the last decade, some art museums have started offering interactives in the galleries as in the British Galleries at the Victoria and Albert Museum where “unlike traditional galleries of art and design, the galleries include large numbers of interpretative devices integrated within the displays” (Durbin, 2002). However, there is little research and literature on what these interactives look like in the

galleries and if they are successful in offering a different way to offer interpretation and ways to engage with art in the art museum environment.

1.3. What is known and isn't known?

Growing research reveals that there is a strong interest in how art museums can incorporate interactives into galleries and how they can benefit from these types of activities. “These interactive galleries are typically conceptualized as spaces that address the unique learning needs of families in a museum environment in ways that traditional art galleries have been unable to achieve” (Edwards, 2005). However, many questions surround the different ways art museums have tried to this. “A fundamental challenge art museums face is how to exhibit objects and interpretive materials in such a way that the materials do not interfere with aesthetic appreciation” (Sousa, 2005). While research indicates interactives have been successful while separate from the rest of the museum, the concept of offering interactives scattered throughout the museum is relatively new. “Much of the current thinking is concerned with the very nature of interactivity in an art context, and discussion frequently seems to refer to two main modes of interaction: that with interpretation designed to facilitate understanding of the art object, and that with the art object itself, with the latter often involving works of art produced specifically for that purpose” (Brookes, 2002).

The idea of designing an interactive, hands-on experience in an art museum is challenging and raises questions how to effectively create such an experience. For example, how is an interactive defined in an art museum? Does it need to include an element of technology or include no technology at all? What does an interactive that is equally engaging for children, young adults and adults look like? Will adults be inclined to participate in a hands-on interactive activity? Which techniques and design styles are more successful and engaging than others?

How do museums incorporate interactives—isolated in the galleries or in the style of a dedicated interactive space? Such questions need to be addressed in order to successfully design and incorporate interactive learning experiences into the art museum.

1.4. Research Goal

The goal of this research study is to examine the different ways in which art museums in the United States are approaching the concept of interactives and how they are incorporating interactives into the museum. It looks at how museums conceptualize and implement interactivity and describes what interactives look like and feel like from a visitor-centered perspective.

Chapter 2: Review of Literature

2.1. Traditional Interpretive Strategies in the Art Museum

Traditional strategies of interpretation in art are centered on the interpretation of objects and providing visitors with different ways to obtain information. “In traditional exhibits and programs, the institution provides content for visitors to consume” (Simon, 2010). Wall labels are typically written by the curators of the different galleries. Curators display objects in groups along with associated images and texts, and thereby produce selective interpretations for visitors (Hooper-Greenhill, 2000). Collections as a whole, and also individual exhibitions, are the result of purposeful activities which are informed by ideas about what is significant and what is not (Hooper-Greenhill, 2000). “Objects are used to materialize, concretize, represent, or symbolize ideas and memories, and through these processes objects enable abstract ideas to be grasped, facilitate the verbalization of thought, and mobilize reflection on experience and knowledge” (Hooper-Greenhill, 2000). There is little room for interpretation beyond what information the curator has provided. The “single fixed meaning, among almost always relating to an academic discipline, has seemed the correct and only way in which the object should be interpreted” (Hooper-Greenhill, 2000).

“Traditional points of entry—the admissions desk, the map, the docent tour—are not typically designed to be audience-centric” and “these supposed entry techniques introduce further layers of abstraction and ritual to the museum experience that may be confusing or off-putting” (Simon, 2010). Docent tours provide visitors with a specific tour of select areas of the institution. Many museums may offer daily programming events that cater to certain groups of visitors and often fall under a certain theme related to a special exhibition, permanent collection or an overview of collection highlights. Day-time programs may be offered to families with

young children. There is programming for teens and young adults that is held outside normal museum operating hours as well as programs like lectures by scholars or artists. Museums advertise tours through special exhibitions at a certain time and present a particular dialogue from a volunteer or docent. When it comes to programs, especially evening events, typically they are scheduled at specific times and are thus are not always available to the drop-in visitor.

Many art museums offer audio guides in special exhibitions. The information provided on an audio guide is written and presented by scholars and offers more detailed explanations of a specific work, the artists, context, or artistic process. “Museums with multiple-channel audio tours geared towards different audiences often use different visual icons for each tour, so you can see that a particular painting has audio commentary on the teen channel and the conservator channel, whereas another sculpture in the same room might just have audio commentary for children” (Simon, 2010). Some museums post a scanning icon, called a QR code next to certain works of art for visitors to scan with a smart phone application or dial a phone number that enables visitors to obtain information on their cell phones while in galleries. However, all three of these methods, audio guides, QR codes and cell phone tours, are self-selective and can exclude visitors if they do not possess the proper equipment. Audio guides are often offered at an extra cost and not every museum visitor has a smart phone, therefore this type of informational guide narrows down the audience that can utilize it. Without the luxury of these additional services, visitors are limited to the information provided in wall labels and other approved information disseminated by the museum.

Interpreting art is to make meaningful connections between what visitors see and the experience in a work of art to what they have seen and experienced (Barrett, 2000).

Interpretation is not only the process of communication between the museum and its audience,

but also the means by which the museum delivers its content (Carter-Birken, 2008). The interpretive frameworks within which objects are seen, and from which they are spoken about, act to place objects within contexts of discourse that shape meaning (Hooper-Greenhill, 2000). Museum visitors can be empowered by interpretive tools to discover their own meaning in the art experience, and the meaning that arises in the moment of art viewing is unique to each visitor (Carter-Birken, 2008). “Rather than delivering the same content to everyone, a participatory institution collects and shares diverse, personalized, and changing content co-produced with visitors” (Simon, 2010).

2.2. What are Interactives?

The term interactive can encompass a wide range of experiences in an art museum (Adams, Buck, Moreno & Polk, 2003). “Hands-on” is used to refer to the mass of exhibits that can be touched and manipulated (Adams et al., 2002). Terms such as hands-on, participatory, and immersive are synonymous with the definition of interactivity. Another definition defines the term interactive as emphasizing the part that visitors play in the process of “interaction” and refers to the family of experiences which actively involve the visitor physically, intellectually, emotionally, and/or socially (Adams et al., 2002). According to Stephen Bitgood (1991) in his article “Suggested Guidelines for Designing Interactive Exhibits,” an interactive exhibit is defined as a device in which the visitor’s response to the exhibit produces a change in the exhibit. Interactive exhibits allow for interaction in some form other than mere visual perception (Cairns & Haywood, 2005). Examples of interactive displays include devices in which the visitor must manipulate controls to discover the answer to a question, such as flipping a panel to reveal the answer to a posed question. The concept of interactivity is seen as an important resource in

enhancing interpretation and creating new forms of engagement with museum collections (Heath & Von Lehn, 2002).

2.3. Enhancing Learning through Interactives

George E. Hein (1995) discusses how constructivist learning theory applies to museums. Hein claims that constructivism is particularly appropriate as a basis for museum education considering the wide range of museum visitors, and poses the question: how can the museum accommodate this diverse audience and facilitate their learning from objects on their voluntary, short visits? Proponents of constructivism argue that learners construct knowledge as they learn; they don't simply add to new facts to what is known, but constantly reorganize and create both understanding and the ability to learn as they interact with the world (Hein, 1995). The Constructivist museum is strongly grounded in the fact that learning is constructed by the individual and social factors, experiences and innate ideas. This theory emphasizes that people construct meaning in the world around them, based upon previous knowledge and the new knowledge they encounter. "Examples of constructivist museums are harder to find, but exhibits that allow visitors to draw their own conclusions about the meaning of the exhibition are based on this constructivist principle" and there is an increasing number of exhibitions that are designed with multiple paths through the exhibit and the visitor "is provided with a range of modalities to acquire information" (Hein, 1993). A constructivist approach to learning encourages the offering of new opportunities for engagement and learning. Constructivism learning theory can be seen carried through in the recently developed discussions of 21st Century Skills, as produced by the Institute of Museum and Library Services (IMLS) in 2010. "Libraries and museums have always been about education and learning" and "they've been evolving and changing to meet changing learning needs," evolving from "places that simply present

knowledge and information to places that share knowledge and engage their communities and work with their communities to co-create experiences” (Imls.gov).

The second theory revolves around the incorporation of different sensory experiences in the museum. The traditional art museum is a “no-touch” environment that forces visitors to use sight as their primary sense of retrieving information. Research suggests that as infants, humans learn and experience the world by touching and moving objects, but with time, more advanced techniques of learning, looking and listening take over (Alvarez, 2005). Physical contact with works of art helps to reconnect visitors with the sensitivity to touch that is prominent in early children’s learning theory. Exploring works of art through touch can have beneficial outcomes, such as allowing viewers to challenge the visual judgments and verbal interpretations that are heavily on display in art museums (Alvarez, 2005). Evaluations of interactive exhibits indicated that “allowing touch has had the effect of breaking down the barriers that can arise from the distance placed between the viewer and the art, as well as increasing understanding of art” (Alvarez, 2005).

2.4. Interactives in the Museum

Many art museums in the United States have created dedicated interactive spaces to offer a new way to engage in learning about art. These experiences consist of permanently displayed interactives that offer visitors an opportunity to touch things, watch a video, use a touch screen device, participate in art making, or read a book, among many other options that go beyond looking at art and reading labels. The interactive experience is differentiated from the rest of the museum because it offers a different type of experience and offers visitors a choice to engage in another activity. “Engagement in interactive spaces over time provides visitors of all ages with inquiry and looking skills needed to have their own dialogue with objects of art” (Adams et al.,

2002). Interactives allow the visitor to be in control of their own experience and inspired by the artistic elements around them in galleries and presented to them in the instructions provided.

The use of installed interactive displays in children's and family galleries is an attempt to achieve the give-and-take of live facilitation without the facilitator (Blake, 2005). Repeated experiences in an interactive gallery can provide a model and engage children in object-centered inquiry, and children tend to implement these looking strategies when they visit the permanent collections (Adams et al., 2002). "The role of the children/family gallery is to transition groups unfamiliar with the museum to a state of confidence in their ability to visit any gallery" (Blake, 2005). Instead of the traditional model of the didactic expository museum, in which "the museum continues to maintain a role for itself as an authoritative source of knowledge," the presence of interactives brings out new ways for visitors to learn (Witcomb, 2011). Dedicated interactive spaces are advertised as a place where visitors of all ages can engage with art in a different way. Art museums have developed these spaces in an attempt to combat the perceptions that they are non-family friendly (Blake, 2005). Many art museums in the United States have created dedicated interactive spaces as a way to enhance engagement among families with young children.

For example, at the Speed Art Museum, the ArtSparks Interactive Gallery enables families and younger visitors to make connections among the interactive experiences, art and their personal lives as a space where visitors felt free to explore art and discover for themselves (Adams et al., 2003). Designers had the goal of providing "ways to help visitors make personal connections and meaning" through a space for creative play where "visitors use this play as a vehicle to connect to their own lives and to the permanent collection" (Adams et al., 2003). Through a mix of interactive activities which require either a high, moderate or very low level of

physical interaction, ArtSparks enables visitors to engage with art through touch or quiet intellectual engagement. From computers to puzzles, there are a variety of ways children can participate in learning activities. While Art Sparks is primarily a family learning center, the interactive learning techniques employed in this space provides new ways for engagement and acts as a starting point for families coming to visit the museum.

At the Getty Museum in Los Angeles, the Family Room gallery features interactive experiences that would provide conceptual tools for visitors to use while visiting the permanent collection. The Family Room was re-created to be a “conceptual springboard” for the more traditional museum experience (Edwards, 2005). The designers of the family room used an “object-centered approach that would address the collections through direct experiences with specific objects and provide conceptual tools for look at art that could be used by families beyond the Family Room experience (Edwards, 2005). While this gallery does not feature any actual art objects, it still enables the visitors to make connections to objects in the Family Room and those in the permanent collection. Visitors can “Draw, Build, Play” by decorating a giant illuminated manuscript with personalized designs, create a sculpture from tubes, act out part of a select painting, or play with perspectives with a camera in a hall of mirrors. Children can “Hunt for Art Treasure” and look through seventy peepholes on treasure hunt walls to see details from art in the permanent collection.

Interactives are being designed as new, non-traditional interpretive tools offering a new way for visitors to learn about and engage with art. Through the use of interactivity, museums have “initiated, mirrored and contributed to the public’s increased interest in experiences that go beyond looking or listening” (Adams, Luke & Moussouri, 2004). Any interactive exploration of concepts or ideas in art museums should be to further visitors’ appreciation and understanding of

the object and assist them in making meaning (Adams et al., 2002). Using interactive exhibits “enables the viewer to participate in a shared space of consciousness and actively participate in the construction and transformation of artistic meaning” (Ascott, 2002). When an interactive experience is considered successful in such museums or exhibitions, it will lead visitors to a greater appreciation of objects and, ultimately, lead visitors to focus more intently on the works of art (Adams et al., 2004). The interactive component serves as a scaffold to the objects (Adams et al., 2004).

Chapter 3: Methodology

3.1. Research Introduction

The goal of this study is to describe emerging trends with interactives in art museums. Three art museums in the United States were selected for case studies based on two criteria: the innovative interactive techniques they have implemented into the permanent collection; and the fact that each museum recently underwent an expansion or renovation in the last decade which has resulted in the creation of a dedicated interactive space.

For the purpose of this research interactivity is as a device “in which the visitor’s response to the exhibit produces a change in the exhibit,” requiring physical manipulation in order to elicit a change in the option that is being presented, to receive new information or discover the answer to a question (Bitgood 1991). While Bitgood’s (1991) definition is limited to “physical interaction with a device,” this study examines interactives that engage the visitor both physically and mentally. Interactives require visitor participation at the lowest level of engagement, where the visitor is mentally engaged, and presents the visitor with an opportunity to respond to a posed question or a chance to physically manipulate content. This definition is confined to the permanent installation of interactives in the museum.

3.2. Methods

Methodology for data collection included interviews with museum professionals involved with curation, education, exhibit design and interactive design; site visits and observations using Serrell’s (2009) “Framework: Assessing Excellence in Exhibitions from a Visitor-Centered Perspective” for descriptions of interactive experiences in exhibitions at each museum; and review of documents and resources provided from each case study, which included the following publications: “New Angles on Interpretation in the DAM’s New Hamilton Building”

(Denverart.org 2007); “Transforming the Art Museum Experience: Gallery One” (Alexander, Barton & Goeser, 2013); and “Get your Game On at CMA” (Mostov, 2012).

3.3. Overview of Case Studies

Three museums were chosen based upon the interactives featured in the permanent collection, the dedicated interactive space in the museum and the recent renovation or expansion. The search for case studies began with a Google engine search for “renovated art museums in the United States.” The three museums selected were the Denver Art Museum (DAM), Cleveland Museum of Art, and Columbus Museum of Art (CMA).

The Denver Art Museum is composed of two spaces, the Hamilton Building and the North Building. In October of 2006, the museum opened the Frederick C. Hamilton Building which offered up an additional 146,000 square feet of space featuring new galleries for the permanent collection, three new temporary exhibition spaces, and storage and public amenities. In addition to the construction of the new building, the museum began work on the North Building in 2006 to begin remodeling seven floors and 210,000 square feet of gallery space. The Hamilton Building features a temporary exhibition space that serves as a studio space. Presently, this space is known as the “Paint Studio,” and “invites everyone in the family to try different artistic processes” from watching artists create to learning more about specific artistic styles and types (Denverartmuseum.org). The museum also features interactives scattered through their permanent collection, called “installed interpretives.”

Beginning in 2005 the Cleveland Museum of Art initiated an extensive expansion and remodel. The museum had to close a series of galleries in order to build new wings that would offer a 33% increase in gallery space. The museum has been reopening finished galleries spaces since 2006, and will ideally finish the project with the opening of the North wing and West wing

galleries by December 2013. With the renovation and reinstallation of the permanent collections, the Cleveland Museum of Art wanted to provide an “enhanced interpretation of the collection through state-of-the-art technology as well as installations that engage the first-time visitor and long-time devotee” (Clevelandart.org). In 2013, the museum revealed Gallery One, the 12,000 square-foot interactive learning center. Gallery One features is composed of four parts: the Studio Play; Art Themes Gallery; the Collection Wall; and Ingalls Library. All of these spaces are confined to Gallery One while the ArtLens iPad application services as mobile interpretation in the permanent collection.

In 2011, the Columbus Museum of Art re-opened after an extensive renovation. The newly updated building offered updated spaces for the permanent collection and temporary exhibitions. On the lower floor of the museum, the Center for Creativity was unveiled, offering 18,000 square feet of additional space. The Center for Creativity was designed to be a “hub for Museum experiences that foster imagination, critical thinking, and innovation” through a “myriad of experiences that engage CMA visitors with art and with each other, model the artistic process, highlight examples of creativity in action, and underscore the importance of creativity in our community” (Columbusmuseum.org). The museum fosters this goal through eight spaces that make up the Center for Creativity. The Family Gallery is a long hallway that features hands-on activities that are inspired by a theme connected to works in the permanent collection. The Wonder Room is an area for families with children ages three to fourteen and offers hands-on and art-making activities. The Innovation Lab features thirty Mac computers and enables visitors to explore technological interactive learning experiences. The Studio is for art-making workshops, classes, and programming events. The Cardinal Health Auditorium allows groups to meet for performances, conferences, films or live webcasting. The Forum is a multi-function

meeting area that features artwork from the permanent collection. The Community Gallery acts as a dedicated space to showcase creative projects from Central Ohio schools and local community organizations. The Creativity @ the CMA Gallery is dedicated specifically to artistic process activities and visitor reflection. The Columbus Museum of Art also features interactives in the permanent collection which are called “connectors.”

3.4. Instruments

Museum professionals involved with the integration of interactives in galleries and dedicated interactive spaces were contacted via email to request an on-site interview. All interviews were conducted face-to-face and were semi-structured in nature. Interviews were recorded after verbal consent to do so was received from all subjects prior to the session. The iPad application AudioNote served as the recording device for each interview.

Interviews consisted of similar content and were tailored to each museum. Questions fell under the following categories: goals of the renovation or expansion; target audience for the museum and dedicated interactive spaces; goals for the dedicated interactive space at each institution; goals for interactives in the permanent collection; audience reaction and response to interactive experiences; and suggestions for improvement or necessary alterations that have been made to interactives in the museum (see Appendices A-C).

Serrell’s (2009) “Framework: Assessing Excellence in Exhibitions from a Visitor-Centered Perspective” was chosen to frame the observations of each site (see Appendix D). This Framework was created to help museum professionals “develop criteria to improve the exhibitions at their institutions” from a “visitor-centered perspective, rather than a subject matter/content, educational or purely aesthetic points of view” (Teller, 2007).

Serrell recommends four criteria that help “assist in the critical examination of exhibitions:” comfort, engaging, reinforcing and meaningful (Teller, 2007). Each Criteria has several Aspects to rate individually. A rating of ++ (excellent), + (a good example), - (not quite there), -- (self-defeating) or NA (not all aspects apply to all exhibitions) is assigned to each Aspect. The final step is to “Rate the Criteria” and assign a rating based upon the individual criteria in each category. The Level Ratings range from Level 1—Excellent, which consists of consistently good Aspects (+’s), with many excellent (++’s), to Level 6—Counterproductive, which consists of mostly self-defeating (--’s), with many missed Aspects (-’s).

I assumed the role of the visitor as I walked through the permanent collection and dedicated interactive spaces in the Denver Art Museum, Cleveland Museum of Art, and Columbus Museum of Art. After exploring the museum, I made my own set of observations using the Framework.

At the Denver Art Museum, I reviewed the dedicated interactive space called the Paint Studio, and the following permanent collections featuring interactives: African, Historic Western American, European American, Asian, American Indian, and American Western Galleries. At the Cleveland Museum of Art, I reviewed the dedicated interactive space Gallery One and the following permanent collections featuring interactives: the Naturalism Idealism and American Art (one of four rooms) Galleries, and the temporary photography exhibition titled “Mt. Vesuvius.” At the Columbus Museum of Art, I reviewed the dedicated interactive space, the Center for Creativity, and the following permanent collections featuring interactives: the American Collection, European Art, Photography, and temporary exhibition on Mark Rothko.

Table 1. Galleries reviewed using Framework guidelines

* Indicates Dedicated Interactive Space

** Indicates Permanent Collection Galleries featuring Interactives

Denver Art Museum	Cleveland Museum of Art	Columbus Museum of Art
Paint Studio*	Gallery One*	Center for Creativity*
African Gallery**	Naturalism-Realism**	European Art**
American Western Art**	American Art (one gallery)**	American Collection**
Historic Western American Art**	<i>Mt. Vesuvius</i> Exhibition**	Photography**
European American Art**		Mark Rothko Exhibition**
Asian Art**		
American Indian Art**		

3.5. Participants

At the Denver Art Museum, I met with the Master Teacher for Western American Art, the Master Teacher of Architecture, Design, and Graphics, and Manager of Digital Engagement Projects, and the Community and Family Coordinators (two individuals). At the Cleveland Museum of Art, I met with the Director of Intergenerational Learning and the Director of Interpretation. At the Columbus Museum of Art, I met with the Director of Education, Assistant Director of Education for Visitor Engagement, and the Soter Curator of Photography.

Table 2. Participants for Interviews at Each Case Study

Denver Art Museum	Cleveland Museum of Art	Columbus Museum of Art
Director of Digital Engagement Projects	Director of Intergenerational Learning	Director of Education
Family and Community Coordinators (2)	Director of Interpretation	Associate Direct of Education for Visitor Engagement
Master Teacher of Western Art		Soter Curator of Photography

Chapter 4: Discussion and Analysis

4.1. How does each museum conceptualize interactivity?

How do the Denver Art Museum, Cleveland Museum of Art, and Columbus Museum of Art conceptualize interactivity in their museum? Interviews with museum professionals suggest the different ways in which each museum approaches interactivity.

Denver Art Museum

At the Denver Art Museum, interactivity aims to offer visitors a range of ways to connect with art in the galleries. The interactives in the permanent galleries are called “installed interpretives.” Installed interpretives vary according to the gallery subject and theme.

Installed interpretives offer a new way to look at art in the permanent collection. A staff member said that “a lot of [the] installed interpretives sort of offer other ways of looking and experiencing art” and “expanding the ideas of how to look at art and how to be creative, and engaged, and inspired by art.” Another staff member elaborated on the reasons behind incorporating these types of techniques into gallery spaces: “We’re trying to challenge that notion that the museum is this white box that you can’t touch anything, obviously you can’t touch the art, but you can get inspired by the art and make something,” and “create your own artwork based on the art installation.”

Installed interpretives are designed to make direct connections and references to works in the permanent collection. As one person put it, “one of our big goals is to connect all of our art making and all of our programming to the collection,” and “the thinking behind this is to give sort of visitors a chance to take something with them, go to a collection, and stop, and look and just experience through these different activities.” Another study participant added that

“connecting art making and puzzles to the objects [...] can really enhance the experience in an art museum.”

Installed interpretives also encourage visitors to work together. A staff member said that the museum has “found this really high quality for design in our interactives [that] brings in everyone and encourages everyone working together,” and that “we are designing for families and designing for everyone to enjoy the space.”

Installed interpretives are designed to give visitors different access points. The museum aims to offer visitors a “conscious choice to have different ways of entering into the work of art and different angles of doing that, angles of interpretation.” One interviewee said that when designing interpretives they are thinking about “how can this offer a different way of looking, looking at a different part of the collection that isn’t explored yet.”

Installed interpretives are designed to give visitors different choices. One staff member provided insight on this idea:

“Choice is so important because we want visitors to be in charge of their experiences but we realize we have to [...] support them in so many ways whether that’s through the physical environment and design, or it’s through the types of things, the types of information, how people read, their senses, all of those things are our job to create the conditions for those people to have a successful visit.”

Installed interpretives are meant to give “people a way of looking at things that isn’t necessarily about art history, but sometimes is more about your own personal connection to things and finding a way to really make that palpable through lots of choices visitors can go to choose or through sharing lots of voices.” Another staff member discussed the multiplicity of installed interpretives:

“We have so many different things. We have games, we have installed interactives, we have live programs, we have journals, we have books, to sort of serve the needs of any choice that you make as a visitor. So if you want to learn more and read and reflect and that have sort of experience, we have that for you. If you want to be creative and make art, we have that for you. So I think that’s where we’re constantly pushing our practice too, to constantly have these different sort of entry points to the museum for what you want to do as a visitor.”

Installed interpretives at the Denver Art Museum come in a wide range of formats and designs in order to achieve one or more of these desired outcomes, which include new ways to look at and experience art, connecting back to the permanent collection, working together, and providing a range of access points and choices for visitors.

Cleveland Museum of Art

At the Cleveland Museum of Art, interactivity is facilitated primarily through technology and represented through the dedicated interactive space in both mobile and permanent forms.

Interactives are designed to provide enhanced interpretation techniques and exploration of the permanent collection. Cleveland’s dedicated interactive space is designed to offer visitors new ways to connect with art and enhance their museum visit. One interviewee suggested that “one of the things both for how the [ArtLens] App was designed and for how Gallery One was designed is thinking about how different people get different information,” and “thinking about all the different ways people gather and hear information, and it’s a lot of different ways.”

Interactivity is about providing different avenues of exploration. Cleveland developed a mobile application for Apple devices, which became available to the public for download in January 2013. The application is called ArtLens and allows visitors to personalize their experience by delving into layers of interpretative content. One interviewee said that ArtLens “gives [visitors] the opportunity to have extended or additional information in the galleries that we wouldn’t be able to fit onto a label” and by having this information in a mobile form gives

“the opportunity to talk about things that are interesting, that might enhance somebody’s visit, their understanding of it that otherwise they wouldn’t have access to” and “provide additional stories” that you cannot do “without providing something like an app.” One staff member discussed the design and content of ArtLens: “the App has to feel like it has enough there that I want to keep coming back [...] and there’s always going to be new depths to plumb [...] therefore the content is really designed to be something that is talking both to people who are physically here but also to people that are virtually being invited here.” Another staff member added that “one of the amazing things about the app is that people [...] can read about the tour that I wrote [and that] they will never come in” to the museum. At Cleveland, having a mobile app means that interactivity is not confined to the museum but can provide experiences that are distinct from a museum visit.

Cleveland’s conceptualization of interactivity began with extensive visitor research prior to and during the renovation. The museum used the renovation and reinstallation of the permanent collections as a way to “change some of the things, some of the traditional structures that are there to better respond to some of the actual behaviors we see.” In 2009, “there was a pretty extensive study of visitor behavior in this museum” and it helped in “thinking about what people do, what they need when they come into a gallery” and how to “change some [...] of the traditional structures that are there to better respond to some of the actual behaviors” seen in the museum.

A recent publication titled “Transforming the Art Museum Experience: Gallery One” includes a description of the development of Gallery One and ArtLens. Audience research revealed what can motivate visitors in the museum and “can provide a more nuanced visitor profile to guide museum interpretation and program development” (Alexander et al., 2013).

ArtLens is designed to respond to the research and “honors the browsing mode we know so many of our visitors adopt in the galleries, allowing visitors to scan works to find digital interpretation for works they gravitate toward as they browse through the galleries” (Alexander et al., 2013). The way information is delivered in Gallery One is done in “ways that feel like experiences rather than didactic lessons, allowing visitors to drive their own encounters with works of art and share their experiences with each other” (Alexander et al., 2013). Cleveland’s design of interactives focuses on offering visitors different ways to access content.

Columbus Museum of Art

At Columbus, interactivity takes two forms. In the permanent collection, interactivity is about connecting visitors to art, and in the dedicated interactive space, interactivity is aimed at fostering creative thinking.

The interactives in the permanent collection at the Columbus are referred to as connectors. Connectors are defined as all parts of a gallery space, like the paint color, the furniture, the label copy, the text, everything except the work of art. The job of connectors is to help make the visitor make a connection to the art. Connectors are part of the “Connecting Art to People” plan, the museum’s interpretive plan that is aimed to create experiences that connect art to people. Connectors are designed to do one or more of the following: close observation, conversation, collaboration, personal relevance, critical thinking, experimentation/play, and awareness/curiosity. One staff member said that when they are designing for new installations and exhibits with connectors, it is important to “be mindful of that balance of the work of art and whatever those connectors are” and consider “what works for the space and what works for the visitor.” All these connectors are about “activating different access points” and exploring how to “unpack all these things in imaginative ways” and “to spark [visitors’] thinking.”

Interactivity in the dedicated interactive space, called the Center for Creativity, is about fostering creative thinking and getting visitors to use their imagination. The museum “wanted to evoke wonder and encourage people to follow their curiosity” and to “provoke [visitors] to use their imagination.” One staff member said that the outcome of connectors was “really for visitors to use their imagination.”

The manifestation of interactivity at Columbus is based in part on research on the 21st Century Skills movement developed by the Institute of Museum and Library Services (IMLS) in 2010. The recent publication “Get Your Game On at the CMA” discusses the institutional shift at Columbus that has resulted in the integration of interactivity. The museum has “moved past the passive 20th-century museum model to a more holistic 21st-century model that welcomes the voice, opinion, and energies of our diverse audiences” (Mostov, 2012). The museum recognizes “that learning is an active endeavor for people of all ages” and that “learning is lively and playful” (Mostov, 2012). Another subject discussed the 21st Century Skills document, describing the four main components, “critical thinking communication, collaboration [and] creativity,” and added that if the museum has “a center for creativity it’s really a catalyst for how we engage with our community and make these changes we feel are so valuable and important to our society.” Based upon research in the 21st century, one interviewee said that the museum has “co-create content” and that “visitors come with knowledge and capability and that we have to recognize that. It’s this multi directional learning.” Columbus aims to ignite creativity among their visitors and do so through a variety of techniques employed in their connectors in the dedicated interactive space and in the permanent collection.

4.2. How does each museum implement interactivity?

What does it look like and feel like from a visitor-centered perspective?

What does interactivity look like at each museum? Each museum takes a different approach to what forms interactivity takes. Serrell's (2009) "Framework: Assessing Excellence in Exhibitions from a Visitor-Centered Perspective" can provide a good general overview of how comfortable, engaging, reinforcing and meaningful a museum exhibition can be. The Framework was conducted through my point of view as a visitor and my observations based upon the detailed criteria discussed in the Framework.

Denver Art Museum: Permanent Collection with Interactives

The physical manifestation of interactivity takes several different forms at the Denver Art Museum. In the North Building, installed interpretives range from quiet contemplative journal responses to hands-on activities. Scattered throughout the galleries, one can often find two chairs are placed in front of a work of art and a journal or book on the table between them. Visitors are given the chance to respond to a question posed in the journal, read the responses of other visitors, or merely ponder the question in conjunction with close observation of the selected work, or read more about the artifacts of the culture on display. Journals, said one subject, are giving people a chance to really think "about how you would describe [a work of art], zooming in on the detail and engaging the senses again," and are "another way of using writing and language to connect" with art. Books and journals are offered in the Historic Western American, European American Art, Asian Art, Spanish and Pre-Columbian Art, and American Indian Art galleries.

Discovery libraries can be found in the Historic American Western and European American Art galleries. The library offers books relating to the gallery theme and concept and has comfortable couches for seating, ample desk space, and features related objects on display on

the shelves. These spaces are “light on interpretation and more just a place to wander,” as “directed wandering through clusters of objects,” said a staff member. A Learning Area is located in Pre-Columbian and Spanish Gallery. Like the Discovery Libraries, the Learning Area offers visitors another chance at exploring content on their own with books and videos.



Figure 1. Discovery Library, European American Gallery, Denver Art Museum

Some floors offer activities that were unique to that gallery. For example, in the Asian Art Gallery in the North Building, visitors are invited to play “Memory” the way the Japanese used to with shells. In European American gallery, a Puppet Theatre offers visitors a chance to look at a work of art by Hieronymus Bosch and create creatures for a puppet show based on what they saw in the painting. Additionally, they are invited to learn about the restoration of a Renaissance period painting through books on a table and videos loaded on an iPad.

The studio concept can be found in several different galleries and follows the structure of a Discovery Library. The Bead Studio in the American Indian Gallery gives visitors an opportunity to reflect upon the use of beads and beadwork in Native American cultures. In addition to books and other resources available, visitors can partake in activities like “Bead by Numbers,” where stylized templates are outlined on a table and large glass roundels are provided as the corresponding bead colors. Visitors can also design and color their own beaded roundel with colored pencils.



Figure 2. Bead Studio, American Indian Gallery, Denver Art Museum

The Western Studio in the Hamilton Building’s American Western gallery offers several different activities. Visitors are encouraged to make their own western postcard using large stamps and colored pencils. The stamps feature customized imagery taken from works in the permanent collection. In the corner behind the stamp activity, there is a video viewing area that plays interviews with five different artists. Each artist, whose work is on display in the museum, addresses five questions that visitors can relate to, for example, “what does it feel like to be an artist?” and “how do you start?” Visitors can choose which video they want to see by placing a magnetic metal “X” (about 3” by 3”) over the painting featuring the artist’s name, which cues the video to start playing. In the other corner of the Western Studio is a dress-up area with western clothing that gives children a chance to dress like a cowboy. In the African Gallery visitors are invited to partake in “Transforming Scraps,” a creative art-making activity inspired by the work and artistic process of the artist El Anatsui. Two tables with stools offer visitors a chance to sit down and use cardboard scraps and twisty-ties to create a miniature quilt piece that they can add to the large communal quilt other visitors have created or take it home.

Denver also offers a mobile application that visitors can download on their phone and use to scan QR codes in the museum. The DAM_Scout app gives visitors the chance to “uncover hidden layers of multi-media content, get the scoop on permanent collections and temporary exhibitions, and hear from artists” and “museum experts” (Denverartmuseum.org). The app is available for visitors with Apple or Android devices. The app is another way of offering visitors

choices through which to explore the museum. Viewing stations in the museum, as seen in the Asian Art Gallery, feature the app loaded onto an iPad and allows visitors the chance to sit and explore, either watching videos or reading related content.

In using Serrell's "Framework" to frame my visit, I noted that my comfort at Denver was affected by the architectural design of the two buildings. The North Building featured straight lines, whereas the Hamilton building has angular surfaces that make the entire building feel like something other than a museum. Both buildings offered plenty of places to rest with padded benches and armchairs. I noted that experiences in the galleries came in several formats and in both buildings on each floor I felt that I could find something to do. Denver was able to offer a reinforcing experience as I noted the clear connection and progression throughout the galleries in terms of concept and theme. I felt confident that I could grasp the concepts and information provided but I could not find any messages that went beyond the value of the objects on display in the museum.

Denver Art Museum: Dedicated Interactive Space

The dedicated interactive space at Denver is called the Studio. It is a permanent space that can be transformed to offer different activities with different themes. Currently (as of April 2013), the space is called the Paint Studio and invites visitors to "try different artistic processes, watch artists create, and learn more about specific art types" ([Denverartmuseum.org](http://denverartmuseum.org)). Three hands-on activities are offered all day, every day.

"Try a Still Life" invites visitors to sit down at tables and create a still life based on flowers in a vase. "Play with Paint" takes up an entire corner of the studio space, and allows visitors to play with paint. Large sculptures of a paint-brush, easel, and two spray-paint cans are placed in the center of an area cornered off with benches and buckets of paint are available for

visitors to use while painting on the wall or the sculptures. “Focus on Details” challenges visitors to paint a specific area of a painting and add it to the wall to create the full painting. In the center of the space is a pillar with shelving that holds photographs and books relating to artists on display at the Denver Art Museum. The Paint Studio has something to offer all visitors.



Figure 3. Paint Studio, Denver Art Museum

Based upon my observations using Serrell’s “Framework,” I thought the Studio was a very welcoming space. The bright lighting, bright colors, banners with the names of activities hanging from the ceiling, and ample seating made me feel comfortable. I particularly liked the fact that the sound of conversation drifted out of the doors of the Paint Studio. I thought the Studio would be welcoming to all different types of visitors, especially families with children. I saw that elements came in a variety of formats and were aimed at different sensory modalities. I was excited to have the opportunity to paint and thought the activities were fun, amusing, and challenging depending on your skill level and willingness to participate. I noted that the messages presented in the Studio reinforced the main theme of the space. Concepts presented were not particularly challenging or complex, but they were structured in such a way to welcome all visitors to participate. As in the galleries, the Paint Studio made a case that the content had value by reinforcing different ways to explore painting but I did not receive any messages that went beyond that.

Cleveland Museum of Art: Permanent Collection with Interactives

At the Cleveland Museum of Art, interactivity in permanent collection is manifested in three ways: a contemplative activity called “Relational Objects,” books offered as additional sources of information, and through the ArtLens iPad application. The Relational Objects concept was born out of an idea by the museum’s director, who wanted to present objects out of chronological order and offer relational hangings in the galleries. A pair of objects, such as two sculptures or a sculpture paired with a painting is placed together in a gallery. Accompanying these objects is a sign with information on each object and a question for visitors to consider. The objects are intentionally presented out of chronological order in an attempt to encourage careful looking and contemplation. The Relational Objects activity was only offered in two of the galleries, Realism-Naturalism and one of the American Art galleries. In the Photography exhibition gallery, in the center of the room there are several chairs and a coffee table with books on photography and additional works by the artists on display. Visitors can explore the phenomenon of photography further if they feel so inclined. This process of rethinking how visitors act in an art museum resulted in the reorganization of the presentation of information.

The primary mode of interpretation and manifestation of interactivity in the permanent collection is through the ArtLens iPad application. ArtLens has five main features: “Near You Now” uses the museum’s indoor way-finding technology to discover artwork in the collection that have additional interpretative content in the galleries and allows visitors to browse the collection on a personal path through the museum; “Scanning” uses image recognition software to capture an artwork and scan the collection to offer access to additional interpretative content, an icon will indicate which objects can be scanned; “Tours” offer selections from both the museum-created and visitor-created tours using the mapping feature to guide visitors through the museum; “Today” lets visitors see a calendar of daily events occurring at the museum; and

“Favorites” allows visitors to share works of art through Facebook or Twitter and create personalized tours which can be shared with other visitors (Clevelandart.org). Visitors who do not have a personal iPad can rent one from the museum for the day for \$5.

ArtLens is a good option for visitors interested in retrieving more

information while in the permanent collection.

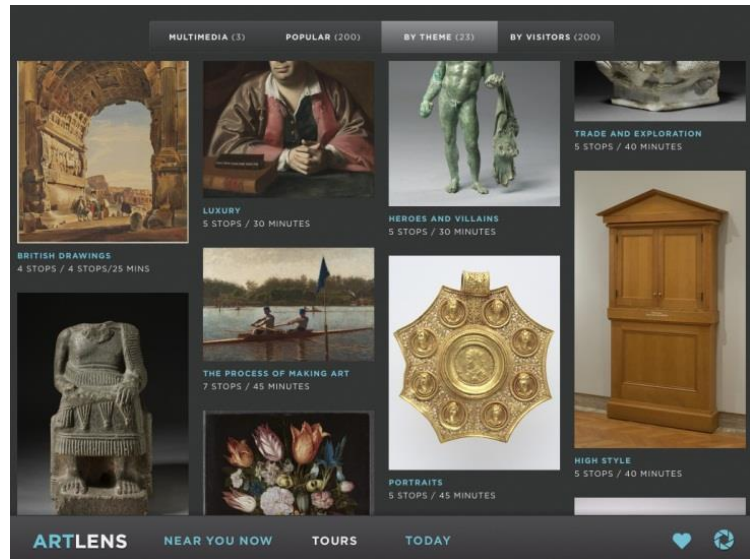


Figure 4. Tours screenshot, ArtLens iPad Application, Cleveland Museum of Art

In considering the “Framework” at Cleveland, I felt that the design and layout of the galleries affected my comfort. The salon-style format and presentation of works felt like an encyclopedic museum and reminded me of the Louvre Museum in Paris. The lighting in the galleries ranged from very dim to very bright depending on the first or lower floor. Overall, the environment felt extremely formal. I was interested in the works on display but my interest level waxed and waned according to gallery theme. I noted that the exhibit experiences came in a traditional format. I was excited when I saw the Relational Objects activity that offered me something to think about. I thought that using the ArtLens iPad application would change my experience in the galleries. As I moved from one gallery to the next, I was moving through historical artistic movements. I noticed that depending on the gallery there was a good amount of works on display but some featured too many and I began to feel overwhelmed. The main message I received in the galleries was that the objects had value in the realm of art.

Cleveland Museum of Art: Dedicated Interactive Space

Cleveland’s dedicated interactive space Gallery One is composed of four parts: Studio Play, the Art Themes Gallery, the Collection Wall, and Ingalls Library. Studio Play is located just inside the main entrance to Gallery One and has glass walls which lets visitors look into the spaces inside. Studio Play is a space for families with children under 10-years old and offers several different activities geared towards families with children. There is a Sculpture Studio, where visitors can create their own mobiles; a Create Gallery where visitors can create their own pieces of art using yarn, colored pencils or felt; a reading area with books; and two interactive touch-screen computers called Interactives. The Interactives feature two lenses through which visitors can explore the collection. The first is “Line and Shape” and by drawing lines the computer automatically finds that line or shape in a work from the collection. “Matching and Sorting” is a matching game that presents six works of art and asks visitors to choose the three works that best represents each theme.

The main space inside Gallery One, called the Art Themes Gallery features six Interactives. These large interactives are set on pedestals in front of a set of objects from the permanent collection that are connected by a common theme. The theme of each Interactive addresses questions that relate directly to the objects. “Information is provided in a question and answer format and hotspots allow visitors to find out



Figure 5. Lion Lens, Art Themes Gallery, Gallery One, Cleveland Museum of Art

additional information by touching specially designated areas to find out more information” (Clevelandart.org). The “Sculpture Lens” poses the question of “How do our bodies inspire art?” and sits in front of three different sculptures. Visitors are invited to “Make a Face” and “Strike a Pose.” Using the camera on top of the interactive, visitor’s expressions are matched with a face in a work of art and challenged to strike an accurate pose based on a sculpture. The “Lion Lens” asks “what does a lion look like?” and are invited to “Cast a Vote,” challenging visitors to consider the meaning and symbolism of presenting an idea in art and vote on what adjectives best describe different lions in the collection. The “Stories Lens” presents visitors with three narratives in the works they see and challenges them to select which story is represented in “Find the Origin.” With “Tell a Story” visitors are challenged to arrange scenes from a tapestry featuring the myth of Perseus to create a comic-strip representation.

The “Globalism Lens” presents visitors with “Global Influences” and identifying which two countries influence the work on display, and “Create a Vase” allows them to create a virtual vase. The “1930s Lens” offers “Draw a Line” where visitors can draw a line and it will connect to a piece in the collection from the 1930s. “Explore

the 1930s” gives visitors a chance to explore the story of Cleveland and the Great Depression and artwork from this era. The “Painting Lens” offers visitors a chance to create their own work of art based upon the style of abstract painting techniques, play with perspective, and explore the

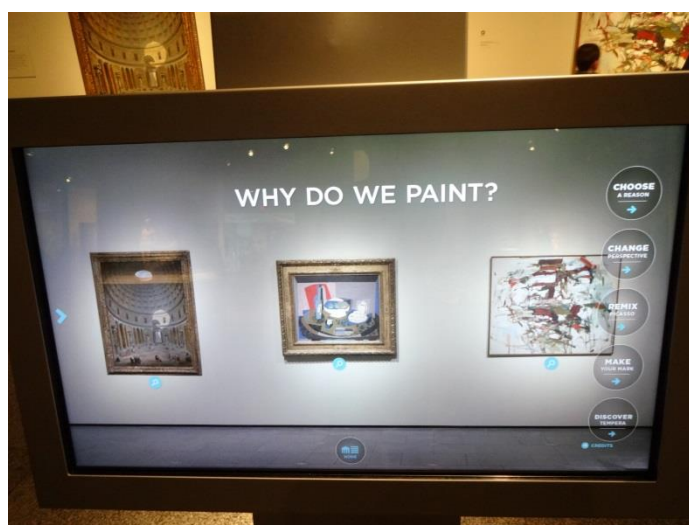


Figure 6. Painting Lens, Art Themes Gallery, Gallery One, Cleveland Museum of Art

artistic motivation behind the creation of abstract paintings through activities like “Mark Your Mark,” “Remix Picasso,” “Change Perspective” and “Discover Tempera.” Each Interactive’s home screen poses a question from which visitors can begin to find the answers through exploring these different activities.

The Collection Wall is located in the room adjacent to the Art Themes Gallery. The Collection Wall is a 40-foot long “interactive, microtile wall featuring over 3,500 works of art from the permanent collection” (Clevelandart.org). Hundreds of thumbnail photos of artworks float across the screen.

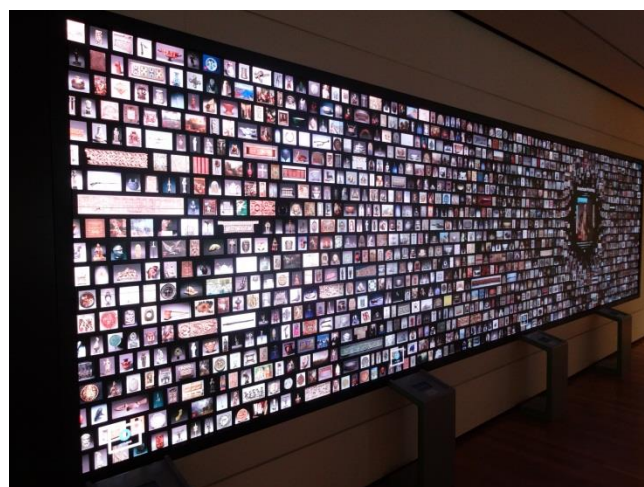


Figure 7. Collection Wall, Gallery One, Cleveland Museum of Art

Visitors can select a work that looks interesting by touching the screen, and information about that work comes up: title, artist, medium, time period, and location in the museum. Every forty seconds the screen display changes. One display features works of art that fall under a selected theme, like “Chair,” “Mother,” or “Line and Rhythm” and works of art that fall under that theme are featured. Another display is “Top 10 Favorites” or “Top 50 Favorites” which features the favorite works as selected by visitors who use the ArtLens app, which syncs with the Collection Wall program.

Ingalls Library is located in the same room as the Collection Wall and gives visitors an opportunity to look up definitions of artistic terms, movements, exhibition catalogs, and various books on art. Books line shelves on the wall and an iPad viewing station is available for visitors to explore the museum’s permanent collection further. The Library acts as a teaser for the Ingalls

Library and Archives, which is located on the second floor of the museum. Visitors are encouraged to visit the Ingalls Library and Archives if they want more information.

In terms of the “Framework,” Gallery One made for a comfortable visit. There was no set path and I could explore the space any way I wanted to. The layout of Gallery One did not affect my comfort as in the galleries. I definitely was interested in the physical appearance of Gallery One. The Interactives drew my attention and enticed me to slow down and investigate each one. I was excited to see the variety in formats with graphics, text, computers, and objects, and the invitation to touch the computers. I did not explore Studio Play as it seemed like a place aimed at a younger audience. The exploratory nature of the entire space promoted an inquisitive look into art and I thought it asked big questions about art. If I wanted to pursue a topic further, I could research it in books in the Ingalls Library or through the ArtLens iPad viewing station. I felt like the appropriate resources through which to explore were provided to me and easily accessible.

Columbus Museum of Art: Permanent Collection with Interactives

Interactivity at Columbus takes many different forms. In the permanent collection there are many different options for visitors to interact. A voting station offers visitors a chance to weigh in based upon personal reflection to where they grew up by comparing five works of art that feature a home nestled in a landscape. By picking up a corkboard medallion, anyone can vote on which painting looks like their house or is reminiscent of where they grew up. A puzzle replicating a painting encourages visitors to not only collaborate with one another, but to look closely at the selected work to see the details necessary to complete the puzzle.

Join the Conversation stations are scattered throughout the galleries. Each station is designed to provoke visitors to comment and respond on ideas and issues in art. Using a Post-It, visitors record their answer and add it to the others. The outcomes associated with each station

are unique to the question posed and the focus of the work. Columbus offers similar Conversation stations in the entry foyer, American Collection, Photography, special exhibition of Mark Rothko and the displays featuring the plans of the museum's upcoming renovation and expansion. Conversation Cards invite visitors to pick one up and "Ignite a conversation about art" and ask questions like "Pick a work of art in the gallery that intrigues you. What company would use it for an advertising campaign?"



Figure 8. Join the Conversation Station, European Gallery, Columbus Museum of Art

In reviewing Serrell's "Framework," I felt very comfortable in the galleries at Columbus. All of the galleries had large padded benches or padded armchairs, which I used frequently. One of the first things I noticed was that each gallery clearly identified with signage. I knew where I was and what I was looking at. I felt like I could create my own path through the museum. As I looked into each gallery, I found myself drawn into explore different activities I saw. The elements came in a variety of formats and allowed me to touch and manipulate objects. The different activities were fun, pleasurable, amusing, and could be both physically and intellectually stimulating. I felt like the information in each gallery was manageable, that the concepts were not especially complex or challenging. I noticed that each gallery focused on one period of art. The arrangement of works reinforced the theme of each gallery. I liked the way labels were written because it offered fuller explanations of artistic reasoning and provided insight into the subject matter. I noticed that in the Photography Gallery, a series of works by

different artists work touched upon contemporary issues like war in the Middle East, sexual identity, and obesity and wanted to see that in other galleries as well.

Columbus Museum of Art: Dedicated Interactive Space

In the dedicated interactive space, the Center for Creativity, visitors are presented with many different ways to engage with art and interesting hands-on activities. Visitors can expect to: converse, look, play, and share, imagine, think, and experiment in this space. Activities in the Center address each of these actions. Connectors at Columbus range from observation and contemplation to highly dynamic involvement. The Big Ideas Gallery offers visitors more opportunities to respond to posed questions with additional Join the Conversation Stations.



Figure 9. Big Ideas Gallery, Center for Creativity, Columbus Museum of Art

Scattered along this hallway are several different activities that explore the current theme of the space, “Making Faces: An Exhibition about the Way We Look.” From arranging blocks that can be used to make up a face, playing “Guess Who,” or drawing a face using just triangles or circles and making twisty-tie sculptures, visitors are given a multitude of options for engagement that all relate directly back to the theme.

Like Cleveland, Columbus offers a hands-on gallery aimed directly at families with children ages 3 and up, called the Wonder Room. Inside the Wonder Room, visitors can take part in activities that are inspired by works in the permanent collection, like building a miniature

Calder-style mobile or a decorating a magnetic oval with metal objects to create a face.

Regardless of age, the Wonder Room has something to intrigue all visitors.

In applying Serrell's "Framework," the Center for Creativity made for a comfortable visit. I noticed all along the walls that conceptual orientation devices were easily located and prominently displayed. In every space, I was able to sit and play a game or create a work of art. I noted that everything was well-kept and in good repair, except the photo-booth. I felt drawn into the Center for Creativity because of the flip-panels on the wall next to the entrance that indicated the different types of things I could do once inside. The activities were fun, amusing, intriguing, and physically stimulating. I was happy to see that experiences came in several different formats and allowed me to touch appropriate objects. I felt that there were activities and things to interest and engage all types of visitors. I noticed that the theme of the space was reinforced through the activities. While the exhibit experiences were not complex, they were challenging because of the way they were structured to encourage personal reflection on interesting questions. I felt like the ideas and objects were made relevant by the activities provided. The exhibit elements made a case that the content had value by reinforcing different ways to look at art and encouraging any and all ideas as welcome and acceptable notions.

4.3. Summary of Implementation

Each museum conceptualizes and approaches the integration of interactives in different ways. Each museum provides visitors with options to experience and access art during their visit to the museum. Denver strives to give visitors choices through which to explore content.

Cleveland focuses on providing different ways for visitors to access content. Columbus wants to create connections with art through participating in creative processes. To achieve the goals surrounding the different approaches, all three museums provide a range of interactive activities.

The range of interactives at each museum falls on this spectrum of low activity to high activity. Some interactives require active participation coupled with mental engagement. Others require low activity, or limited physical interaction, and primarily mental engagement. At Denver, the Discovery Libraries offer activities across the spectrum. A low activity option is reading books, having quiet contemplation and exploration. Responding to a journal prompt is a good example of low and high activity; a visitor may choose to merely ponder the question, or answer with a written response. High activity options are participating in an art making activity.



Figure 10. Low Activity to High Activity Spectrum Visual

At Columbus, interactives also fall all along this spectrum. A low activity example is responding to prompts in the Center for Creativity, like looking at a series of portraits and asking “Why do we wear masks?” Puzzles are low activity options because visitors use close observation to complete a puzzle but there is little physical exertion. Join the Conversation stations are both low and high activity options; visitors can choose to respond or not respond. Activities like art making, playing with shapes to make a face or creating a twisty-tie sculpture fall on the high activity end of the spectrum.

At Cleveland, interactivity falls more on the low activity end of the spectrum. ArtLens, the Interactives in the Art Themes Gallery, Collection Wall, and Ingalls Library are low activity examples because they require a lower amount of physical interaction. In Studio Play there are high activity examples, like art-making activities and building sculptures, where physical

interaction is necessary. The Interactive Lenses can be a low and high activity option because they pose questions that a visitor can contemplate or choose to participate in activities that require more physical interaction, like “Strike a Pose.”

Having a range of interactives at each institution allows different visitors to engage in the ways in which they feel comfortable. A visitor can choose to move through the galleries without partaking in interactive experiences. A family with young children has the opportunity to make art and play in their own space and engage in interactives in the permanent collection. These types of combination experiences are available at Denver, Cleveland, and Columbus.

Each museum integrated technology in some form into interactives in the museum. At Denver, technology was present in interactives in the permanent collection in the form of videos and computer displays. In the Western Studio, there are videos featuring interviews with artists that reveal artistic process and inspiration. There are videos in other parts of the museum that offer a deeper look into artistic process, art restoration, and other interviews with artists. In the Asian Gallery there is the DAM_SCOUT iPad viewing station. Technology at Denver is limited to videos and computer displays.

At Cleveland, technology is prominent in their interactives. The ArtLens iPad app, Interactive Lenses in the Art Themes Gallery, Collection Wall, and Interactives in Studio Play all utilize touch-screen computer technology. The only interactives not using technology is the Relational Objects and books offered for additional information in the galleries.

At Columbus, technology takes a back-seat in the design of connectors. The only forms of technology present in the Center for Creativity is a photo-booth that lets visitors take pictures.

and share them via social media and the computers in the lab that the museum reserves for requesting groups. Connectors in the rest of the museum feature little to no technology.

Each museum conceptualizes and implements interactivity in different ways. Through an overall look at each museum, several trends emerge about how art museums are approaching the concept of interactivity. The implementation and design of interactives are aligned with the institutional approach to interpretation. The range of interpretive approaches can be seen at these three museums. Columbus is about focusing on creative process and creative thinking, while Cleveland offers different access points to content, and Denver wants to offer choices that connect back to the permanent collection.

Chapter 5: Conclusions

5.1. Conclusions

Art museums are continuing to experiment with interactivity. From quiet contemplation to activities requiring visitor participation, the techniques employed by Denver, Cleveland and Columbus are diverse. Denver wants to provide visitors with a range of choices to make connections with the permanent collection. Cleveland offers enhanced interpretation techniques through different avenues of exploration to access content. Columbus wants to ignite creativity through connecting with art in imaginative ways.

The designs for interactives are varied and have different desired outcomes. Columbus' Puzzle connector is meant to encourage visitors to work together and look more closely at the details in a painting in order to complete the puzzle. Cleveland's Collection Wall gives visitors examples of how to think about art with themes like "Chair" and "Mother." Denver's Western Studio offers activities from making postcards, to videos about artists' creative process, to playing dress up. Each museum provides visitors with the option of different access points through which to learn about and engage with art.

Interactives are meant to enhance the overall experience of art, not detract or take away from the art itself. Each type of interactive experience gives visitors a different way through which to approach a work of art and learn about it. Denver's Journals direct the visitor to the work of art in question. Cleveland's ArtLens app is about giving visitors a chance to uncover additional information that cannot fit onto an extended wall label. Columbus' Join the Conversation stations are connected to a work of art on display. All three of these examples direct a visitor's attention to a work of art in an attempt to encourage close observation and as a result cultivate a more meaningful experience with art.

While the conceptualization and implementation of interactivity is different and this study did not look at the impact of that implementation, it is clear that each museum is employing techniques that cater to their audience needs.

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Appendix A

Denver Art Museum: Interview Questions

1. **The DAM underwent a huge renovation and reopened in 2006.**
 - a. Can you please tell me what you think motivated the renovation?
 - b. Did the museum initiate a new strategic plan?
 - c. If so, do you know what the goals of that new plan was?
 - d. Do you know what the museum hoped to achieve with the renovation?
2. **The Hamilton Building was the product of the renovation.**
 - a. If you know, can you please tell me about the goals the DAM laid out for the galleries in the Hamilton building?
 - b. Are any of the goals that you know of directly associated with the enhancement of visitor learning and engagement with the art on display?
 - c. Do you know how much of the redesign/renovation was associated with providing a space for visitors to engage with the art in new ways?
3. **What can you tell me about the target audience For the Hamilton Building?**
 - a. Is the museum hoping to draw in a different audience for this space?
 - b. If so, can you please tell me more about what types of visitors the museum is trying to attract?
 - c. What does the museum hope to gain from these different areas for the different audiences?
 - d. What do you think the target audience is in the Hamilton Building vs. the visitors in the rest of the museum?
4. **In the “New Angles on Interpretation,” the report states that each room has installed interpretives.**
 - a. Can you please describe the types of interactives the DAM offers in these new gallery spaces?
 - b. To your knowledge, how does the museum define these interpretive experiences?
 - c. What do you think the goals are of these interpretives as laid out by the DAM?
 - d. How successful have these interpretives been at the DAM?
 - i. In terms of enhancing the learning experience for visitors?
 - ii. Offering a chance for engagement with art?
 - e. Do you think new installed interpretives in the Hamilton building have been fulfilling the goals as laid out by the designers of the space?
5. **Audience Reaction**
 - a. Do you know what the audience response has been to the Hamilton Building?
 - b. Please explain your answer
6. **Improvement/Suggestions**
 - a. Do you know if there has been any improvements to the interactives recently (since the opening of the Hamilton Building)
 - b. If so, do you know what was changed? Why were these improvements suggested?
 - c. Do you think these changes will affect the visitor’s experience by enhancing learning?

Appendix B

Cleveland Museum of Art: Interview Questions

1. **On the museum website, it mentions that one of the two goals was to transform outdated museum spaces.**
 - a. In what ways do you think the museum spaces were designated as “outdated”?
 - b. Do you know how did the Facilities Master Plan hope to alter the museum to transform these outdated spaces?
 - c. What do you think the museum hoped to gain from the new updated spaces?
 - d. What do you think were the long-term goals of renovating the museum and the hopeful outcomes for the visitors?
2. **How has the Cleveland Museum of Art implemented their goal of “enhanced interpretation of the collection”?**
 - a. Can you tell me about the different technological interpretation the museum offers?
 - b. Gallery One discussion 😊
3. **Do you know that the Master Plan goals for the 12,000 square foot interactive learning center?**
 - a. Do you know what were the the proposed/hopeful outcomes for visitors as laid out by the museum and designers?
 - b. From what you have heard since it opened, what has been the visitor response to Gallery One?
4. **Target Audience**
 - a. What is the target audience that the museum hopes to draw in?
 - b. Have you noticed a difference in that audience since the opening of Gallery One?
 - c. What about the target audience for Gallery One? What is the goal for the target audience?
 - d. Did the museum stipulate the type of target audience they thought/hoped to use this new space?
 - e. Do you think the opening of Gallery One has brought in a new type of audience to the museum?
5. **Visitor Response**
 - a. Do you think the gallery been effective in communicating information about art and the permanent collection to visitors?
 - b. Do you think it has been effective in providing a different form of interpretation? (has it enabled visitors to provide their own interpretation to the art works they see?)
 - c. To what extent do you think visitors find this space informative about highlighting connections to the permanent collection in the museum?
6. **Although the installation has only been open since January 21, have any suggestions for improvement been made?**
 - a. If so, what needs to be improved and why?
 - b. How will improvements enhance the goals for the space?

Appendix C

Columbus Museum of Art: Interview Questions

1. **The museum was renovated to create this new space. If you know them, what were the goals for the renovated space?**
 - a. What do you think the CMA want to gain from the construction of the Center of Creativity?
 - b. Do you know what the current goals are for the space?
 - c. Do you think those goals have changed since the space opened? If yes, how do you think the goals have changed?
 - d. Do you know if the museum initiated a new strategic plan to create this space?
 - e. If yes: How do you think the C.f.C. fit into the strategic plan?
2. **What is the target audience of the Columbus Museum of Art?**
What kinds of visitors is the museum trying to draw in on a daily basis?
 - a. Have you noticed that this audience has changed since the renovation?
 - b. If so, how has it changed?
 - c. Do you think these changes in audience are a direct result of the renovation and creation of the Center of Creativity?
3. **What can you tell me about the target audience for the Center of Creativity?**
 - a. I know the space offers many different things. Are there different audiences for different rooms in the Center?
 - b. If so, can you please tell me more about them?
 - c. What does the museum hope to gain from these different areas for the different audiences?
4. **What types of permanent activities are offered in the Center for Creativity?**
 - a. I know the space offers interactive activities, can you please tell me more about them?
 - i. How does the museum, to your knowledge, define an interactive activity?
 - b. Does the museum rotate in new activities/interactives?
 - c. What types of interpretive techniques are being used?
 - d. How are visitors encouraged to engage with works of art?
 - e. Are certain activities in the galleries aimed at certain groups?
5. **What types of interactive displays or installed interactives are featured in the Center for Creativity?**
 - a. Do you think these interactives have:
 - i. Enhanced the visitor's learning experience?
 - ii. Been successful in enhancing that learning experience?
 - iii. Been successful in providing a more engaging experience for visitors?
 - iv. Been successful in offering a wider range of activities for different visitors?
6. **Suggestions for Improvement**
 - a. Do you know of any improvements that have been made to the C.f.C.?
 - i. Has anything been changed? What has changed? Please explain.
 - ii. How do you think the improvements will enhance the space?

Appendix D

Beverly Serrell's "Framework: Assessing Excellence in Exhibitions from a Visitor-Centered Perspective"

FRAMEWORK

Assessing Excellence in Exhibitions from a Visitor-Centered Perspective

Use this Framework to talk with your peers about excellence
and improve your professional practice.



First Meeting

Gather a team of six to 10 museum professionals and meet for at least two hours to become familiar with the Framework and to come to a common understanding of procedures before judging an exhibition.

You will be rating and discussing an exhibition regarding its level of achievement for four different **Criteria**. Is the exhibition:

Comfortable? Engaging? Reinforcing? Meaningful?

1. Comfortable

An excellent exhibition helps the visitor feel comfortable—physically and psychologically. Good comfort opens the door to other positive experiences. Lack of comfort prevents them.

2. Engaging

An excellent exhibition is engaging for visitors. It entices them to pay attention. Engagement is the first step toward finding meaning.

3. Reinforcing

In an excellent exhibition, the exhibits provide visitors with abundant opportunities to be successful and to feel intellectually competent—beyond the “wow” of engagement. In addition, the exhibits reinforce each other, providing multiple means of accessing similar bits of information that are all part of a cohesive whole. Visitors are confidently on their way to having meaningful experiences.

4. Meaningful

An excellent exhibition provides personally relevant experiences for visitors. Beyond being engaged and feeling competent, visitors find themselves changed, cognitively and affectively, in immediate and long-lasting ways.

Ratings are based on two different kinds of data:

Call-outs: your experiences in the exhibition as a visitor

Aspects: the evidence you found that supported each Criterion

At the end of the first meeting, pick an exhibition to visit.

Exhibition Title _____

Institution _____ Your initials _____ Date of Visit _____

2**Create Call-outs**

Visit the exhibition by yourself. Keep notes about your experience in the form of sentences with feeling verbs—your thoughts, feelings and responses as you experience the exhibition as a visitor. These are your Call-outs.





Call-outs Continued



3

Assess the Aspects

After visiting, leave the exhibition and then assess the Aspects—the evidence defining each Criterion—listed below. Using your Call-outs as a reference, think about to what degree each Aspect was appropriately present or not present in the exhibition. Using the following guidelines, put pluses and minuses in the right-hand columns.

++ Excellent, a wonderful example	– Not quite there	NA Does not apply (Not all Aspects apply to all exhibitions.)
+ A good example	– – Self-defeating	

1. Aspects of Comfortable	
a. Physical and conceptual orientation devices were present.	
b. There were convenient places to rest.	
c. The lighting, temperature, and sound levels were appropriate.	
d. Everything was well-kept, functioning, and in good repair.	
e. There was a good ergonomic fit. Exhibit elements could be read, viewed and used with ease.	
f. Choices and options for things to do were clear. Visitors were encouraged to feel in control of their own experiences.	
g. Authorship, biases, intent, and perspectives of the exhibition were revealed, identified, or attributed. The exhibits reveal who is talking, fact from fiction or opinion, the real from the not real.	
h. The exhibition welcomed people of different cultural backgrounds, economic classes, educational levels, and physical abilities.	

2. Aspects of Engaging	
a. The physical environment looked interesting and invited exploration.	
b. Exhibits caught my attention and enticed me to slow down, to look, interact, and spend time attending to many elements.	
c. Exhibits were fun—pleasurable, challenging, amusing, intriguing, and intellectually or physically stimulating.	
d. Exhibit components encouraged and promoted social behaviors. Exhibits encouraged visitors to call one another over, read out loud, point at, and converse about the exhibit material.	
e. Experiences came in a variety of formats (e.g., graphics, text, objects, AV, computers, living things, models, phenomena) and a variety of sensory modalities—sight, sound, motion, touch, etc.	
f. Regardless of a visitor's prior knowledge or interests, there were interesting things to do.	

3. Aspects of Reinforcing	
a. The exhibition was not overwhelming. There were “just enough” things to do.	
b. Challenging or complex exhibit experiences were structured so that visitors who tried to figure them out were likely to say, “I got it,” and feel confident and motivated to do more.	
c. The presentation had a logic. It held together intellectually in a way that was easily followed and understood.	
d. The information and ideas in different parts of the exhibition were complementary and reinforced each other.	
e. The exhibit built on itself.	

4. Aspects of Meaningful	
a. Ideas and objects in the exhibition (natural specimens, living collections, cultural artifacts, art work, demonstrations, and activities) were made relevant to and easily integrated into the visitors' experience, regardless of their levels of knowledge or motivation.	
b. The exhibition made a case that its content had value. The material was timely, important, and resonated with the visitors' values. Meaning is the “so what.”	
c. The exhibition content touched on universal human concerns and didn't shy away from deep or controversial issues.	
d. The exhibit experience promoted change in people's thinking and feeling, even transcendence. Exhibits gave visitors the means to make generalizations, change beliefs and attitudes, and/or take action.	

4

Rate the Criteria

To what extent did you think each Criterion was likely to be experienced in the exhibition?

Assign a rating level (1-6) to each Criterion.

Level 1 Excellent—Consistently good Aspects (+’s), with many excellent (++’s)

Level 2 Very Good—Consistently good Aspects (+’s) with very few or no misses (–’s)

Level 3 Good—Mostly good Aspects (+’s), but with some misses (–’s)

Level 4 Acceptable—A balance between good Aspects (+’s) and missed Aspects (–’s), or a few noteworthy things

Level 5 Misses Opportunities—Mostly missed Aspects (–’s), but there may be a few good Aspects (+’s)

Level 6 Counterproductive—Mostly self-defeating (– –’s), with many missed Aspects (–’s)

Using the evidence of your Call-outs and Aspects, write a Rationale for your rating.

1. Comfortable

Level Rationale:

2. Engaging

Level Rationale:

3. Reinforcing

Level Rationale:

4. Meaningful

Level Rationale:



5

Assessment Comparison Meeting

Allow at least two hours for the follow-up meeting. Start by recording everyone's ratings in the chart below.

Criteria Level Ratings Summary

Judge's Initials	Comfortable	Engaging	Reinforcing	Meaningful
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Any Strong Disagreements?

Discuss areas of greatest disagreement among the ratings above. Why do you disagree?

Recording Consensus

Discuss, then list, specific features, experiences, or feelings about the exhibition—both positive and negative—that you ALL agree on.

1. _____
2. _____
3. _____
4. _____
5. _____

Social Moderation

After all the discussions, did anyone want to modify his or her ratings? If so, alter the ratings in the chart above.

Congratulations! You are now an Excellent Judge!



This project was supported in part by the National Science Foundation.
Opinions expressed are those of the authors and not necessarily those of the Foundation.

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