Increasing Art Museum Engagement Using Interactive and Immersive Technologies

Blair Chisholm

ARTH489K Art and the Museum World

May 10, 2018

## Introduction

Art museums have a challenging future ahead of them. Between 2002 and 2012, the percent of American adults who had visited an art museum in the last year dropped from 26.5% to 21.0%.[1] Although absolute art museum attendance increased by 1.2% from 2014 to 2016,[2] the American population grew by 1.5% during the same time period,[3] so art museums are still experiencing a slight decline in attendance and not recovering to previous rates. Unlike other industries, a relatively small portion of museum revenue comes the typical visitor. Instead, museums rely on grants, endowments, and large private donations,[4] which are all highly susceptible to economic and political threats. Additionally, with the growth of location-based entertainment options and online cultural content, museums must find ways to stay relevant among young people. This paper will present a framework for categorizing museum audiences and then explore how several innovative exhibitions used digital technology as part of a design strategy to increase engagement among young people and others who do not frequent art museums. These cases will show that although technology is vital to these exhibitions because it opens up new interaction possibilities, the exhibition design process is still centered on finding the right tools to create an experience, not piecing together an experience that makes use of the latest technology.

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[1] Steven Shewfelt et al., How a Nation Engages with Art, ed. Rebecca Gross, report no. 57, September 2013, accessed May 8, 2018, https://www.arts.gov/sites/default/files/highlights-from-2012-sppa-revised-oct-2015.pdf.

[2] "Art Museums by the Numbers 2016," Association of Art Museum Directors, accessed May 5, 2018. https://aamd.org/sites/default/files/document/Art%20Museums%20By%20the%20Numbers%202016.pdf.

[3] "Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2017," U.S. Census Bureau, Population Division, last modified December, 2017, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPANNRES.

[4] "Art Museums by the Numbers 2016," Association of Art Museum Directors, accessed May 5, 2018. https://aamd.org/sites/default/files/document/Art%20Museums%20By%20the%20Numbers%202016.pdf.

## Understanding the Museum Audience

The most important thing in any design challenge is to know your audience. In 2008, the Dallas Museum of Art commissioned a study so that they could better understand the visitors coming to their museum.[5] As part of that study, four categories of visitors were created based on the way they engaged with the art, which are summarized in the table below.

| | |
|---|---|
| Tentative Observers | Uncomfortable discussing art<br>No emotional connection to art<br>Interested in straightforward information |
| Curious Participants | Comfortable viewing and discussing art<br>Lack formal knowledge and confidence |
| Discerning Independents | Comfortable with academic description of art<br>Like to view and interpret art on their own<br>Have had meaningful and emotional experiences with art |
| Committed Enthusiasts | Comfortable viewing, discussing, and explaining art<br>Emotionally connected<br>Interested in all types of information and interpretation |

Another way to think about visitors is based on their preferred interaction style. This is explored by Nina Simon in The Participatory Museum.[6] The types of visitors she describes are listed in the table below. It is important to remember that the same person may prefer a different type of interaction depending on context.

| | |
|---|---|
| Creators | Making new content |
| Critics | Voting on what content is best |

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[5] Randi Korn & Associates, Inc., "Levels of Engagement with Art, 2008 Study," Dallas Museum of Art, August 2008, https://www.dma.org/sites/default/files/file_attachments/Levels%20of%20Engagement%202008.pdf.

[6] Nina Simon, *The Participatory Museum* (Museum 2.0: Santa Cruz, 2010), http://www.participatorymuseum.org/read/.

| | Commenting on content created by others |
|---|---|
| Collectors | Tagging or making lists of related content<br>Arranging content within a space |
| Spectators | Passively consuming content<br>Watching others create or interact |

Traditional art exhibitions are designed for spectators. When an art exhibition adds interaction, the most obvious addition is creation. But creation is intimidating for most people, especially if the activity is too open-ended.[7] It is much easier to convince a visitor to rate or tag a piece of art than it is to get them to draw something. Creation is still great for some people but it shouldn't be the only option.

**Case Studies**

ArtLens

*ArtLens* is an exhibition at the Cleveland Museum of Art. The current version opened in June 2017.[8] It contains 16 interactives organized around four principles of art: Gesture and Emotion, Symbols, Purpose, and Composition.[9] Although the exhibition contains many digital elements, it is not meant to replace looking at art in person. In one interactive called Shape Seeker, visitors draw shapes on a touchscreen wall and are then presented with artworks from the

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[7] Simon, *The Participatory Museum*.
[8] Madeline Armitage, "GLAMi Nomination: ARTLENS Gallery," Museums and the Web, accessed May 7, 2018. https://mw18.mwconf.org/glami/artlens-gallery/.
[9] "ArtLens Exhibition," The Cleveland Museum of Art, accessed May 7, 2018. http://www.clevelandart.org/artlens-gallery/artlens-exhibition.

museum's collection that contain those shapes.[10] Another interactive called Gaze Tracker

instructs visitors to look at a piece of art for 15 seconds. At the end, it displays where the visitor

looked "including what grabbed their attention first, what detail they viewed the longest, and

what elements they ignored."[11] The other interactives follow the same pattern of encouraging

visitors to go see art in the rest of the museum while equipping them with the tools to engage

with it meaningfully. This approach to teaching visitors how to enjoy and understand artwork

and by using interactive technology has paid off. Visitors engage with the artwork physically

located within the *ArtLens* exhibition for an average of 76 seconds,[12] more than double the

average at other museums.[13]


Wonderkamers

*Wonderkamers* is an exhibition in the Municipal Museum in the Netherlands that opened

in November 2013. The exhibition has a target audience of students ages nine to 15, but is open

to all ages.[14] The exhibition contains a large central display of miniature artworks. Around the

edges of the space, there are 13 rooms containing art-inspired games where visitors can score

points.[15] Each visitor is given a tablet when they enter, which keeps track of their points and

guides them between activities. Visitors use points to purchase artworks for their own virtual

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[10]Cleveland Museum of Art, "Studio Play | The Cleveland Museum of Art," Youtube, last modified October 20, 2016. https://www.youtube.com/watch?v=xh7KIRO4cHg.

[11] "ArtLens Exhibition," The Cleveland Museum of Art.

[12] Armitage, "GLAMi Nomination: ARTLENS Gallery."

[13] Lisa F. Smith, Jeffrey K. Smith, and Pablo P. L. Tinio, "Time Spent Viewing Art and Reading Labels.," *Psychology of Aesthetics, Creativity, and the Arts* 11, no. 1 (2017): , doi:10.1037/aca0000049.

[14] Doug Barnes and Robert Coker, "tspp #306- TEA Summit & Theas Pt. 4: EXPERIENCE!," August 4, 2017, in *The Season Pass Podcast*, MP3 audio, http://seasonpasspodcast.libsyn.com/webpage/2015/08.

[15] "WONDERKAMERS," Gemeentemuseum Den Haag, accessed May 7, 2018. https://www.gemeentemuseum.nl/en/exhibitions/wonderkamers.

exhibition.[16] As in ArtLens, the activities connect with artworks that are displayed in other exhibits. For example, in one game visitors dance along to the music that inspired "Broadway Boogie-Woogie" by Mondrian.[17]

 *Wonderkamers* has been a huge success. Benno Tempel, director of the Municipal Museum, stated that "the general public stays an average for an hour and a half in the museum. In the *Wonderkamers* people stay for around 3 hours. It's like an addiction, it's so much fun to do it."[18] Museum staff have observed that children want to stay in *Wonderkamers* longer than their parents, but afterward they also want to go see the other exhibits to find the art they learned about.[19] There are several ways that *Wonderkamers* is designed for this success with young people. The games in *Wonderkamers* are clearly structured. Visitors know what they are supposed to do, which makes it less intimidating for those who are shy or uncomfortable with art. The virtual exhibition activity is more open-ended and appeals to collectors. By sharing their virtual exhibitions online, visitors create a souvenir for themselves, get to show off to their friends, and provide free advertising for the museum. The tablet is central to the experience, which makes it feel more like a game than a typical museum visit. Because the tablet tells visitors where to go next, it can reroute people when a room gets too crowded, which keeps wait times for activities low.[20] The activity structure, familiar technology, point-based incentive, and crowd control all contribute to a fantastic experience for young people.

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[16] Barnes and Coker, "tspp #306."
[17] Barnes and Coker, "tspp #306."
[18] Daria Kravchuk, "A Museum of Wonders for Both Kids and Adults Alike Comments," Museum, April 29, 2017, accessed May 07, 2018, https://www.museeum.com/reimagining-museum-experiences-for-young-audiences/.
[19] Barnes and Coker, "tspp #306."
[20] Barnes and Coker, "tspp #306."

Meet Vincent van Gogh

*Meet Vincent van Gogh* is a traveling exhibition created by the Van Gogh Museum in the

Netherlands. Two sets of it are currently on a five-year tour through China that started in May

2016.[21] Van Gogh is a popular artist around the world, but many of his works are too fragile to

travel, so the Van Gogh Museum decided to create an exhibition where people who live far away

from the museum can learn about and connect with the art in a different way.[22] The focus of this

exhibition is providing context for van Gogh's art by telling the story of his life. Many visitors

already know that van Gogh died by suicide, which is not a happy ending for an exhibition that

tells a life story, so the designers decided to start the exhibition with a video that depicts his

mental health struggle and the end of his life.[23] Visitors then walk through scenes that inspired

famous paintings as if they are flashbacks to happier times. At the end, visitors can look through

van Gogh's artwork on wall screens and at computer kiosks.[24]

While walking through the exhibition, visitors listen to an audio guide which tells van

Gogh's story in his own words using extensive quotes from his letters and journals. There are

two different version of the audio guide, one for kids and one for adults, so families can go to the

exhibition and experience it together while receiving information that is age-appropriate.[25] The

physical environment also immerses visitors in the story. Some elements such as haystacks and

cafe tables are traditional set design. Others, such as a house with a projected exterior that makes

[21] Xiong Yuqing, "'Meet Vincent van Gogh' Tour to Premiere in China next May," *Global Times*, last modified August 11, 2015. http://www.globaltimes.cn/content/936529.shtml.
[22] Doug Barnes and Robert Coker, "tspp #361- The TEA Summit & Thea Awards 2017 Day 2 - Morning Sessions," March 20, 2018, in *The Season Pass Podcast*, MP3 audio, http://seasonpasspodcast.libsyn.com/tspp-361-the-tea-summit-thea-awards-2017-day-2-morning-sessions-32018.
[23] Barnes and Coker, "tspp #361."
[24] Axel Rüger, "Meet Vincent Van Gogh Axel Rüger, Director, Van Gogh Museum (NL)" last modified June 13, 2016. https://www.slideshare.net/WeAreMuseums/meet-vincent-van-gogh-axel-ruger-director-van-gogh-museum-nl.
[25] Barnes and Coker, "tspp #361."

it look straight out of a van Gogh painting, are enabled by technology.[26] The interactives are also a mix of analog and digital. The exhibition contains two creative activities, one with perspective drawing and another with painting. The painting one is digital due to the messiness of actual paint, but the drawing activity was left analog.[27] This is a good choice because transferring the drawing activity to a screen wouldn't add anything and would actually make the activity less similar to what an artist would use in that time period. The designers never used technology just to be cutting edge. Instead, they found the right tools to meet their goals.

## Conclusion

These three exhibitions show that new technologies such as eye tracking, image recognition, and augmented reality can be helpful for creating engaging content that has appeal outside the traditional museum audience. They enable experiences that are exciting, immersive, social, and educational. They can get visitors to stay longer, come back again, and tell their friends. But just because technology can be used for innovation in museum experiences does not mean that it has this effect automatically. The creators of the three cases in this paper made sure to use the right tool for the job, and went with traditional analog methods when going higher tech had no benefit or would provide a distraction.

Regardless of technology, the basis of exhibition design remains the same. Designers must know their intended audience and experience goals. None of these exhibitions are suited to discerning independents, who already understand art concepts and prefer to come up with their own interpretations. While all the cases are open to all ages, adults are clearly a higher priority

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[26] Rüger, "Meet Vincent Van Gogh."
[27] Barnes and Coker, "tspp #361."

for *Meet Vincent van Gogh*, which provides an adult-only narration of an emotionally-charged life story, than in *Wonderkamers*, where the games are silly and the tablet interface may be confusing for people who didn't grow up with it. The learning goals are also clear from the design of each exhibition. The purpose of *Meet Vincent van Gogh* is almost entirely to provide context for van Gogh's work through his life story. In contrast, the artwork in *ArtLens* can be swapped out to keep the exhibition fresh without affecting the teaching of underlying concepts. When art museums consider how to bring in more young people and become more accessible to those without formal art education, they should look to these and other examples to determine whether and how they can make use of interactive and immersive technology. Although technology is not the point of any these exhibitions, they wouldn't have been possible without it.

Bibliography

"Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2017," U.S. Census

Bureau, Population Division, last modified December, 2017,

https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2

017_PEPANNRES&src=pt.

Armitage, Madeline. "GLAMi Nomination: ARTLENS Gallery," Museums and the Web.

Accessed May 7, 2018. https://mw18.mwconf.org/glami/artlens-gallery/.

"ArtLens Exhibition," The Cleveland Museum of Art. Accessed May 7, 2018.

http://www.clevelandart.org/artlens-gallery/artlens-exhibition.

"Art Museums by the Numbers 2016," Association of Art Museum Directors, accessed May 5,

2018.

https://aamd.org/sites/default/files/document/Art%20Museums%20By%20the%20Numb

ers%202016.pdf.

Barnes, Doug and Robert Coker. "tspp #306- TEA Summit & Theas Pt. 4: EXPERIENCE!." *The

Season Pass Podcast*. August 4, 2017. MP3 audio.

http://seasonpasspodcast.libsyn.com/webpage/2015/08.

Barnes, Doug and Robert Coker. "tspp #361- The TEA Summit & Thea Awards 2017 Day 2 -

Morning Sessions." *The Season Pass Podcast*. March 20, 2018. MP3 audio.

http://seasonpasspodcast.libsyn.com/tspp-361-the-tea-summit-thea-awards-2017-day-2-m

orning-sessions-32018.

Kravchuk, Daria. "A Museum of Wonders for Both Kids and Adults Alike." Museeum. April 29,

    2017. Accessed May 07, 2018.

    https://www.museeum.com/reimagining-museum-experiences-for-young-audiences/.

Randi Korn & Associates, Inc., "Levels of Engagement with Art, 2008 Study," Dallas Museum

    of Art, August 2008,

    https://www.dma.org/sites/default/files/file_attachments/Levels%20of%20Engagement%

    202008.pdf.

Rüger, Axel. "Meet Vincent Van Gogh Axel Rüger, Director, Van Gogh Museum (NL)." June 13,

    2016.

    https://www.slideshare.net/WeAreMuseums/meet-vincent-van-gogh-axel-ruger-director-

    van-gogh-museum-nl.

Shewfelt, Steven, Roman Ivanchenko, Melissa Menzer, and Tamika Shingler. *How a Nation*

    *Engages with Art*. Edited by Rebecca Gross. Report no. 57. September 2013. Accessed

    May 8, 2018.

    https://www.arts.gov/sites/default/files/highlights-from-2012-sppa-revised-oct-2015.pdf.

Simon, Nina. *The Participatory Museum*. Museum 2.0: Santa Cruz, 2010,

    http://www.participatorymuseum.org/read/.

Smith, Lisa F., Jeffrey K. Smith, and Pablo P. L. Tinio. "Time Spent Viewing Art and Reading

    Labels." *Psychology of Aesthetics, Creativity, and the Arts* 11, no. 1 (2017): 77-85.

    doi:10.1037/aca0000049.

Yuqing, Xiong. "'Meet Vincent van Gogh' Tour to Premiere in China next May." *Global Times*.

    last modified August 11, 2015. http://www.globaltimes.cn/content/936529.shtml.