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What the Eye Doesn't See: The Power of Non-Ocularcentric Engagement in Museum Learning

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Honors Thesis

WHAT THE EYE DOESN'T SEE: THE POWER OF NON-OCULARCENTRIC ENGAGEMENT IN MUSEUM LEARNING

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ABSTRACT

WHAT THE EYE DOESN'T SEE: THE POWER OF NON-OCULARCENTRIC ENGAGEMENT IN MUSEUM LEARNING

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Museums are unique spaces of teaching and learning. Museum exhibits transcend the constraints of classroom learning by leveraging visitors' curiosity and allowing for increased learning autonomy. However, this learning often comes solely through visual interaction, due to museums' role in preservation and protection of their collection. Though visual-based learning is common in museums and in Western education at large, multisensory elements cement learning autonomy and prompt visitors to learn through play. These principles are exemplified through children's' museums, science museums, and museum adaptations for blind and low-vision visitors. Through multisensory adaptations, traditional museums can transform their impact on visitors. This creative component of this project is the practical extension of these principles. The exhibit imagines if the Metropolitan Museum of Art used in-gallery, multisensory elements to allow visitors of all ages to connect more deeply with the works on view.

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BACKGROUND RESEARCH

Introduction

Museums are too ocularcentric. Their reliance on and prioritization of sight over other senses (their ocularcentricity) is a limiting flaw, shaped by the culture and context of their history. The ocularcentric paradigm, with roots in Enlightenment philosophy, permeates much western culture.[1] It is found in attitudes towards learning, methods of data collection, and verbal cliches. In the case of museums, ocularcentricity is a deeply limiting factor. Too much focus on visual information means overlooking other powerful ways to connect to visitors and create impactful learning experiences. Museums are uniquely positioned to teach, unburdened by the time, space, and group limitations of a traditional classroom setting, and must expand to fill this privilege.[2] To achieve this, museums must expand and transcend previous techniques focused on sight. Through the use of non-ocularcentric design elements, museums can deepen visitor connection and prompt more impactful engagement and learning.

Museums Teach in Unique Ways

Museums create a special space for teaching and learning. Without the natural structure or restrictions of a classroom, visitors to museums learn in deeply impactful ways. A traditional classroom prompts transmission learning, where concepts are taught through conscious telling and guidance, a museum allows visitors to learn through acquisition and emergence. Acquisition learning is intrinsically motivated. Learners are driven by curiosity to experiment and explore. Emergence learning comes from reflection. Through

[1] Kavanagh, Donncha. "Ocularcentrism and its others: A framework for metatheoretical analysis." *Organization Studies* 25, no. 3 (2004): 446-447.
[2] Allen, Sue. "Designs for learning: Studying science museum exhibits that do more than entertain." *Science education* 88, no. S1 (2004): S17-S33.

grouping, patterning, and the creation of new meaning, learners work creatively, problem-solve, and synthesize new material.[3] Both acquisition learning and emergence learning fit within a constructivist education ideal that science and children's museums follow.

In this way, museums fill a learning gap found in the classroom. Acquisition and emergence learning are difficult to facilitate in the classroom because of limited resources and time, but interactive non-ocularcentric museums excel at these two methodologies. In particular, science and children's museums prioritize exploration and experimentation and introduce visitors to environments and sensations they could never reach in a classroom setting. Museums also give visitors time to reflect. With time and space to consider what they have seen and learned visitors' learning and connection deepens.

Understanding How Museums Became Ocularcentric

Museums were not always hands-off places. The birth of the modern museum began with the private collection, where the collectors had complete freedom with their artifacts, and handling curiosities and artifacts was a common part of visits. It was an exclusive process, visitors necessarily having some connection to the collector, and this familiarity and exclusivity allowing for a complete sensory experience. By handling and examining artifacts for themselves, as objects true to their intended creation, visitors could develop deep empathy for and understanding of the collected objects. They also acquired prestige through touching objects that prominent others had previously handled. This hands-on tradition continued in early museums, visitors handling artifacts, objects, and even

[3] Wilson, Leslie Owen. "Types of Learning." https://thesecondprinciple.com, March 11, 2017. https://thesecondprinciple.com/optimal-learning/types-of-learning/#:~:text=Transmission%20is%20the%20process%20by,telling%2C%20demonstration%2C%20and%20guidance.

touching paintings. One woman, after a trip to the Ashmolean museum in around 1694, writes about her multisensory experience, mentioning, “there is a Cane which looks like a solid heavy thing but if you take it in your hands its *[sic]* as light as a feather.” [4] This description reveals that an entire depth of knowledge and information about the object would have been inaccessible without her physical as well as visual perception.

Despite the value of this mode of museum engagement, damage and theft were major concerns for both the museum facilitators and the collectors themselves. Despite this, visitors were able to handle artifacts at the Ashmolean museum through 1827. As museums welcomed more and more visitors, facilitators’ first priority shifted to conservation. Around the eighteenth century, respect and trust shifted from the sense of touch to that of sight.[5] This preference for sight, the foundation for the ocularcentricity that shapes our world today, perhaps has ties as far back as Ancient Greece.

Through the distance of sight, ancient philosophers were removed the individual from direct contact with the object, allowing for neutrality. This intellectual distance, praised and elevated in Ancient Greece and beyond, led to a concept that sight was the intellectually purest sense. Senses other than sight were believed to take away from the intellectual life of the mind. They were distractions that pushed attention towards the inner emotions and sensations of the individual, away from cool rationality.[6] Plato grouped sight “with the creation of human intelligence and soul, and that of the other senses…with man’s material being.”[7] This ideology caught up with museums in the eighteenth century, surrendering their sensory element to the ideals of an ocularcentric

[4] Classen, Constance. "Museum manners: The sensory life of the early museum." *Journal of social history* (2007): 895-914. (page 896)
[5] Classen, Constance. "Museum manners: The sensory life of the early museum." *Journal of social history* (2007): 895-914. (page 896)
[6] Jay, Martin. *Downcast eyes: The denigration of vision in twentieth-century French thought*. Univ of California Press, 1993. (p 312)
[7] Kavanagh, Donncha.

world. Today, modern museums still weigh the risk of damage with the ideal of full engagement. In an article published last year, conservators consider the same issue their collector predecessors struggled with.[8] How to conserve and protect collections for visitors who would be individually better served by a touch that slowly corrupts and destroys?

How can we as designers of experiences transform what was once a pejorative perspective on non-ocularcentric sensation and bring out what does focus users on their inner selves, what allows them to step outside the complex, sometimes overwhelming life of the mind and experience and learn things in a more grounding, visceral way? The personal, emotional response to non-ocularcentric stimuli, once denigrated, may now become a key to connection and learning.

Aside from the dilemmas of a collection or art-based museums, two types of museums already use non-ocularcentric elements in their design: science museums and children's museums.[9] Having transformed what was once a negative perspective, they utilize the grounding, visceral power of non-visual senses, expanding beyond the sometimes-overwhelming confines of the intellect. Visitors' personal, emotional responses to non-ocularcentric stimuli, once denigrated, have become a key to connection and learning.

Multisensory Exhibit Design Feeds Learning Autonomy

The Exploratorium in San Francisco, CA is a touchstone for non-ocularcentric experiential learning. The inspired concept of Frank Oppenheimer, arising from a concern

[8] Henderson, Jane, and Ashley Lingle. "Touch decisions: For heritage objects." *Journal of the American Institute for Conservation* (2023): 1-13.
[9] Howes, David. "Introduction to sensory museology." *The Senses and Society* 9, no. 3 (2014): 259-267. (p 262)

over the public's general scientific ignorance. While teaching at a university, Oppenheimer developed a "library of experiments" his students could work through directed by their curiosity and natural learning methods. After receiving funding, this library of experiments became a physical reality in 1969, a revolutionary blend of art, science, and education known as the Exploratorium.[10] This approach to science museum education has become a standard. The Exploratorium is still a forerunner in science education and non-ocularcentric exhibitions. With countless hands-on interactions that challenge and complement visitors' visual experiences, the Exploratorium teaches about light refraction, color perception, and state changes in ways that emphasize exploration and chaos through personal experimentation, minimizing technical language and complex models. User-centered design is paramount to the Exploratorium, and understanding the interaction patterns and learning of visitors allows Exploratorium designers and educators to optimize visitor flow through intuitive interactions and immersive experiences. [11] One iconic Exploratorium exhibit is the tactile dome, a totally dark area of exploration where visitors' non-ocular senses are prioritized.

Visitors are given an unusual dose of agency in science museums. They engage in a cycle of exploration and experimentation focused on the inherent physicality of the scientific processes, a direct contrast to the filtered intellectualism of traditional ocularcentric learning. This process is an apt and thoughtful solution to the need for continuous engagement teaching in museums relies on. Sue Allen of the Exploratorium writes, "On the exhibit floor there is no accountability, no curriculum, no teachers to enforce concentration." She explains that without these learning structures—with the

[10] https://www.exploratorium.edu/about/our-story
[11] Allen, Sue. "Designs for learning: Studying science museum exhibits that do more than entertain." *Science education* 88, no. S1 (2004): S17-S33.

incredible freedom just mentioned—the museum cannot be structured as a teacher leads her class through intermediate frustration to the satisfactory climax of understanding. Instead, each intermediate step a visitor follows must individually motivate them to continue their learning experience.[12] Because of this need for motivation, the natural cyclical method of multisensory discovery is key to science museums. This autonomy of exploration is a key part of the School-Museum Learning Framework (SMLF), a guide to integrating museum learning with classroom curriculum. Guiding principle number two of the SMLF is "to give the students as much ownership of their learning as is possible."[13] This emphasis on autonomous, self-motivating exploration and learning allows visitors to play, answering their own questions for the love of learning, gleaning new insights through their physical interactions with the exhibits.

This is something well understood by science museums. Touch was paramount in scientific discovery as Curator of Experiments of the Royal Society Robert Hooke noted. He wrote that visual interaction with an object needed supplementation with the "manual handling...of the very things themselves."[14] Founded in 1660, the Royal Society was an enlightened forebear to the modern-day science museum, publishing Isaac Newton, hosting Benjamin Franklin, and offering scientific lectures to the public. Hooke's clear understanding of the value of tactile stimulation is inspiring, highlighting the potential for discovery and learning it offers. Public lectures, manual handling, and educational outreach are still key elements of the Royal Society's mission and practice today.

In an exhibit titled *Learning about Learning* at the Providence Children's Museum, children's caregivers were interviewed about their children learning through play. When

[12] Allen, Sue.
[13] Griffin, Janette. "Learning science through practical experiences in museums." *International Journal of Science Education* 20, no. 6 (1998): 655-663.
[14] Hooke, Robert. The Posthumous Works of Robert Hooke. United Kingdom: Taylor & Francis, 2019. (p 335)

asked to describe the physical activities their children were engaging in, 35% of caregivers said that their child was working towards a goal. Trial and error, persistence, and concentration were all listed as indicators of thinking and learning while playing.[15] The self-motivated nature of this museum combined with non-ocularcentric engagement creates deeper engagements and leads to learning by play. At the Chicago Children's Museum *Tinkering Lab* exhibit, children and their adults had freedom to make whatever they liked in the open woodshop. A prompt such as, "Make something that rolls" directed visitors if they chose to follow it. After their hands-on experience in the lab, visitors' responses showed a deep understanding of the practical problem-solving process as well as the technical aspects and skills.[16] Despite the tendency for learning-made-fun to skip out on crucial yet challenging step in the learning process, playful learning in children's museums is effective. This autonomous tinkering experience allowed visitors the conceptual space to learn through play and the physical elements to build skills and solve problems. The space and time in this type of learning is found few other places.

Learning Through Play Is Inherently Multisensory

A space highly knowledgeable about learning through play is children's museums. Play is crucial element of childhood development, and a powerful tool for teaching and learning. Play rarely, if ever, relies solely on visual interactions. A key sense of play, especially for toddlers and younger children is touch. Children's museums have no fear of using tactile, kinesthetic, and other non-ocularcentric modes of engagement. Children have 20 times

[15] Letourneau, Susan M., Robin Meisner, Jessica L. Neuwirth, and David M. Sobel. "What do caregivers notice and value about how children learn through play in a children's museum?." *Journal of Museum Education* 42, no. 1 (2017): 87-98.
[16] Pagano, Lauren C., Catherine A. Haden, David H. Uttal, and Tsivia Cohen. "Conversational reflections about tinkering experiences in a children's museum." *Science Education* 103, no. 6 (2019): 1493-1512.

the number of nerve networks in their skin than those in old age have.[17] This enhanced perception leads them to rely of tactile experiences to learn more about the world around them. Though tactile experiences may enhance and deepen any visitor's learning, touch-forward exhibits often are only found as part of a science or children's museum. Part of this preference may stem from a historic perception that the use of touch was "infantile" and "primitive" and an ocularcentric experience was more intellectually pure.[18] The visitors to a children's museum have no fear of being considered infantile or primitive; they are just ready to play.

Because of their commitment to the learning experience of their visitors, science museums are also not afraid to take learning in an entirely non-ocular direction. A traveling exhibit called *Cave Expedition* visited museums in Denmark and Belgium in 2007-8 through which museum educators wanted visitors to learn about adaptations of the blind cave beetle through an immersive experience. To experience the world from the beetle's point of view, visitors walked into a dark space, using their senses of touch and smell to navigate, just like the blind cave beetle. The interior cave elements were scaled up to make human visitors proportionally the size of a beetle.[19] Through the use of non-ocularcentric elements, the exhibit provided visitors a way to empathize with the blind cave beetle, thus experientially and playfully learning about its daily existence.

Through interviews with family groups and unaccompanied adult visitors who visited the exhibit, researchers probed its efficacy. Visitors did not always connect their experience directly and specifically with the blind cave beetle, perhaps because of a

[17] Montagu, Ashley. Touching: The Human Significance of the Skin. United Kingdom, HarperCollins, 1986. pp.6-7
[18] Classen, Constance. "The Social History of the Senses." Encyclopedia of European Social History 4 (2001): 355-63.
[19] Mortensen, Marianne Foss. "Analysis of the educational potential of a science museum learning environment: Visitors' experience with and understanding of an immersion exhibit." *International Journal of Science Education* 33, no. 4 (2011): 517-545.

disconnect in instructional signage. However, through their sensory experience, visitors understood quickly that they were experiencing a simulated cave, and many connected it with the experience of cave-dwelling animals. Visitors commented on its immersive nature and mentioned that by experiencing the exhibit space, they could "have some sensation of the way, the animals live."[20] Though the outcomes and understanding did not match specifically what the education and exhibit designers hoped, visitors were still impacted by the non-ocularcentric sensory experience of the immersive space. By entering a playful exhibit, their empathy and understanding was expanded.

Learning through play solves many exhibition learning pitfalls. It is internally motivated, entertaining children and preparing them to learn and develop new skills. It also allows children to be autonomous, leading themselves and friends down their own learning path. Play brings joy, building visitor excitement and crucial learning moments as children discover things that surprise them. Learning through play is hands-on and minds-on, requiring both physical experimentation and mental problem-solving.[21] While designers of play-based educational exhibits make learning appealing and fun, they should not allow this concept to weaken into the educational equivalent of vitamins in a breakfast cereal: edutainment. Though it may deliver some vital nutrients, the habits and tastes leading to a balanced diet are alarmingly absent. Fun, flashy, and popular, edutainment makes learning palatable to picky learners, but often lacks the development of skills vital to lifelong learners.[22] Instead, crucial concepts such as perseverance, problem-solving, and imagination are found in meaningful play-based learning.

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[20] Mortensen, Marianne Foss.
[21] Zosh, Jennifer N., Emily J. Hopkins, Hanne Jensen, Claire Liu, Dave Neale, Kathy Hirsh-Pasek, S. Lynneth Solis, and David Whitebread. *Learning through play: a review of the evidence*. Billund, Denmark: LEGO Fonden, 2017.
[22] Okan, Zühal. "Edutainment: Is learning at risk?." *British journal of educational technology* 34, no. 3 (2003): 255-264.

On this topic, Maria Roussou paraphrases an interview with Alan Kay saying, “Kay makes the distinction between soft fun (when the environment does most of the things for you) and hard fun (playing a musical instrument as opposed to listening to it).” [23] Growth comes from hard fun, meaningful activities that push children to learn new skills and develop new areas of their character. This deeply impactful hard fun is seen in children’s experiences with thoughtful non-ocularcentric activities at various children’s museums. At the Please Touch Museum in Philadelphia, researchers observed a child putting groceries from a play store into a play kitchen. Through a dialogue with the child’s mother, the child learned through trial and error where each food item belonged in a kitchen. The incorporation of the physical action and learning through play taught this child practical, applicable skills.[24] Through thoughtful multisensory design, this exhibit at the Please Touch Museum was able to achieve both autonomous engagement and promote learning through play. With a tenacious approach to hard fun, visitors develop long-lasting learning skills.

Learning through play is not only for children, though it may perhaps come more naturally to them. For a child, a museum is a space of discovery and learning. For adults, museums may prompt insecurity over questions they have and alienation from the artwork or objects they interact with. Such was the case with a group of adults who had never visited an art gallery at the Tate Liverpool. Accompanying their children on a museum visit, these visitors “were not confident with being in the gallery, nor with their own artistic ability or knowledge of art, so they…laughed or openly dismissed some of

[23] Roussou, Maria. "Learning by doing and learning through play: an exploration of interactivity in virtual environments for children." *Computers in Entertainment (CIE)* 2, no. 1 (2004): 10-10.
[24] Puchner, Laurel, Robyn Rapoport, and Suzanne Gaskins. "Learning in children's museums: is it really happening?." *Curator: The Museum Journal* 44, no. 3 (2001): 237-259.

the art as being 'weird' or 'rubbish.'"[25] This inhibition may prevent some adult visitors from accessing the ability to learn through play that is so fundamental to children. However, when museums are willing to offer adult visitors non-ocularcentric elements and prompt them to engage in learning through play, adult visitors learn even more when they are able to set aside their reservations.

Adaptations Can Transform Traditional Museums

To this point, multisensory tours offered to adults at the Museum of Fine Arts, Boston have been successful in improving engagement and learning. Through carefully selecting sensory stimulation to fit with the work discussed in the tour, museum educators were able to connect Algerian spices, a silk kimono, and a smoky-scented African mask to the works they highlighted in the tour. Visitor engagement on these tours was profound, in post-tour surveys visitors commented on the senses involved how their stimulation enhanced the gallery discussion. Visitor learning was also impacted, participants of the multisensory tours were significantly more likely to tell others about their experience and rated the memorability of their tour significantly higher than those attending a non-multisensory equivalent tour.[26] These non-ocularcentric adaptations transformed adult visitors' learning experiences in the museum. This example from the Museum of Fine Arts, Boston is an ideal example of how to incorporate multisensory adaptations to a traditionally (and perhaps necessarily) ocularacentric museum space.

Non-ocularcentric elements with the potential for interactive learning create exciting potential for visitor engagement. They may, however, seem to stand in conflict

[25] Wright, Denise. "Engaging Young Children and Families in Gallery Education at Tate Liverpool." International Journal of Art & Design Education, vol. 39, no. 4, 2020, pp. 739-753. Social Science Premium Collection, doi: 10.15446/rcp.v23n1.41000. p.748
[26] Dodek, Wendy L. "Bringing art to life through multi-sensory tours." Journal of Museum Education 37.1 (2012): 115-124. p.120

with traditional museums' responsibilities to protect and preserve their artifacts. More recently, museums have recognized the value of multisensory experience elements and haptic engagement, prompting integration of more tactile-focused exhibits. These touch-forward exhibits tend to target audiences of blind and visually impaired visitors, but their benefits extend to all patrons. Historically, despite the hands-off tradition of museums, tactile collections for the blind existed, typically as part of a private collection or a school for the blind. This tradition expanded in the 1950s, along with a shift from purely instructive purposes for tactile collections to exhibits that considered the beauty and pleasure found in a full range of tactile experience.[27] Where museums now sit on this spectrum of practicality and pleasure remains to be seen. The Victoria and Albert Museum in London has an article about what they call "touch object," or reproductions of collection pieces that the public is encouraged to touch and learn from. The touch objects found on the V&A website serve both purposes. Some allow blind or visually impaired visitors to gain an understanding of what the museum's collection holds, more didactic in purpose. Many highlighted in this article, however, seem to show a desire to prompt deeper learning in both sighted and non-sighted individuals, whether a steel mitten gauntlet to wear and feel its weight, or different types of glazed terracotta to teach about pottery processes.[28] The V&A understands the value of incorporating tactile experiences for their museum visitors.

This article fits with my own experiences in museums. In the Smithsonian National Air and Space Museum, in an exhibit on Orville and Wilbur Wright, small plastic models of the biplane on display stood next to information cards. These models

[27] A Proposal for a Tactile Museum of Environmental Discovery: David Hammond, Marcus Weisen, 1987. pp.7-10
[28] Hoskin, Dawn. "Please Touch • V&A Blog." V&A Blog, July 8, 2014. https://www.vam.ac.uk/blog/creating-new-europe-1600-1800-galleries/please-touch.

provided blind and visually impaired visitors to gain a practical understanding of the plane in the exhibit and allowed all visitors to feel for themselves the details of the engineering. On a recent trip to the Netherlands, each museum I visited had similar offerings. Reproductions of Rembrandt etchings with raised ridges to feel, scents of paints, and the glossy surface of the shell he made an etching of tried to bring visitors into Rembrandt's world through a sensory experience. Rooms exhibiting musical instruments in the Rijks Museum played music, prompting visitors to imagine the instruments out of their glass cases and in a performance. An exhibit under the stairs at the Stedelijk Museum asked visitors, *What does your art sound like?,* and provided them with xylophones and zippers on the wall, asking them to make their own soundscape. This shift shows the value of multisensory elements in any museum space, and the adaptability such adaptations can offer.

Pitfalls From Popular Culture

Outside the educational sphere, novelty seems to draw people to immersive exhibits. Exhibits such as the Museum of Ice Cream (MOIC) have gone viral, attracting more and more people to the experience—a series of photo-ops designed to crown Instagram feeds. The museum claims to help visitors to rediscover their inner child, "inspire human connection and energize the senses."[29] With pits of giant sprinkles, slides, pink subway cars, hanging plastic bananas, and cups of ice cream, this space could lean into its full sensory potential. Instead, visitors focus more on getting a perfect image of their experience than the experience itself. Taking the shining promise of multisensory exhibit engagement and translating the experience into the overwhelmingly ocularcentric

[29] https://www.museumoficecream.com/about/

medium of Instagram is a perversion not unlike trying to sell hungry diner customers photocopies of pancakes. Even the museum's claim of inspiring human connection is suspect, facilitated through stilted mixers with what are often groups of self-centered, prickly consumers.[30] Since its opening in 2016, the Museum of Ice Cream has inspired many similar experience exhibits, as well as a good deal of criticism complaining that the museum is shallow and capitalistic, overpriced and underwhelming. The Museum of Ice Cream and its companions are what Ben Davis of Artnet calls, "Big Fun Art."[31] Big Fun Art, though dazzling and immersive, requires no patience, thought, or context—the adult form of crippling edutainment. Its influence has already been felt. On the fringe of Big Fun Art, yet influential, substantial, and relevant, Yayoi Kusama's Infinity Rooms sold out just like another viral phenomenon. Kusama's works, products of decades of personal struggle, served as backdrops to Instagram selfies for many visitors, transforming the conceptual to spectacle.[32] The divorce of context and understanding from experience in the Big Fun Art space leaves visitors unprepared for mindful meaning-making, like children unused to the unexpected hard work of learning.

Another immersive exhibition underneath the Big Fun Art umbrella, yet with a little more originality and substance is Meow Wolf. With origins as an artists' collective, Meow Wolf opened its doors to anyone, enjoying the improvisation and creativity needed to meld concepts and styles. This complex visual background perhaps lent itself to the intricacy of their current style; Meow Wolf is maximalist in a big way. With three current exhibition spaces, each square foot is designed to complete a sense of immersion and

[30] Silman, Anna. "Could You Survive a Day at the Museum of Ice Cream with No Phone?" The Cut, February 21, 2020. https://www.thecut.com/2020/02/could-you-survive-the-museum-of-ice-cream-with-no-phone.html
[31] Davis, Ben. "State of the Culture, Part I: Museums, 'experiences,' and the Year of Big Fun Art." Artnet News, January 2, 2018. https://news.artnet.com/news/state-of-the-culture-part-i-1184315
[32] Stromberg, Matt. "Museum as selfie station." *Contemporary Art Review. La* 11 (2018): 18-29.

contribute to their storytelling. The Museum of Ice Cream could hardly be more aesthetically different. Visiting Meow Wolf is an almost ephemeral experience, the choose-your-own-adventure nature of it along with the complexity and scope of sensory stimulation mean it would be difficult to replicate. The MOIC relies on being replicable, providing the same photo-op for anyone paying admission. Meow Wolf doesn't photograph well. The dim lighting, fluorescent colors, and floor-to-ceiling detailed textures contribute to its non-ocularcentric elements.

Even if an appealing photograph of the place could be easily made, it could not capture the whole of the experience, leaving out the soundscape, scents, and physical textures. This phenomenon is precisely what the team of artists at Meow Wolf hope for, says past CEO Vince Kadlubek, "We want to create something where I could put up a thousand images, I could put up video, but it doesn't at all even capture the *feeling* of it."[33] They've been successful there. With no reference to the outside world inside their exhibits, Meow Wolf spaces are truly immersive. After visiting, once outside, memories of the exhibit feel like a dream half crushed out of shape by a morning alarm.

Because Meow Wolf exists entirely as its own world, there is no educational element to their exhibits. Perhaps surprisingly, their elements, concepts, and visitor impact are of interest to educational museums, trying to apply their immersive impact to a more traditional setting. By exploring the way exhibits like Meow Wolf can inform educational museums, Amanda Lacey notes that when presented with the totally immersive multisensory world of Meow Wolf, visitors are autonomously, "asking questions, practicing disciplinary skills, searching for evidence, and forming conclusions," practices

[33] Lesser, Casey. "A New Breed of Immersive Art Experiences Offers a Gateway to Alternative Realities." Artsy, May 21, 2018. https://www.artsy.net/article/artsy-editorial-new-breed-immersive-art-experiences-offers-gateway-alternative-realities.

valuable to any lifelong learner. [34] The potential that exhibits like Meow Wolf and Museum of Ice Cream explore, is inspiring, fresh, and exciting despite their disparate approaches and results. Kadlubek feels this as well, predicting that exhibits like Meow Wolf and MOIC "are all just precursors to what is about to really pop-off for everyone…There's a whole way of being that's going to be shifting soon."[35] The concept that exhibits spaces are becoming increasingly multisensory is powerful. And it seems to be well-founded.

Conclusion

Educational museum programs are led by a wacky, immersive art installations, museums with over 150 years of history pull on early museum experiences by letting any visitor have proxy touch experiences, and the power of autonomous play in learning is well documented and lovingly maintained in interactive museums today. Through understanding the impact multisensory elements have on autonomous learning and creating hard fun opportunities, exhibit designers may be able to maximize the museums' ability to move and teach. The museum's unique space in teaching and learning gives it the responsibility to act as an example to the educational systems and members around them. The movement of many exhibits and museums towards this multisensory future is exciting. Once museums overcome limiting ocularcentric traditions, these concepts may expand so that deeper learning and more profoundly personal experiences come from expansive multisensory experiences.

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[34] Lacey, Amanda. "Meowing Wolf: The Querical Experiential Museum and Social Studies Education." *Ohio Social Studies Review* 58, no. 1 (2022): Article-4.
[35] Lesser, Casey.

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METHODOLOGY

For the creative portion of this thesis, I wanted to create a practical application of the research outlined above. Having had experience interning and working at local museums such as the Springville Museum of Art, Bean Life Science Museum, and BYU Museum of Art, I wanted to combine elements of practice with the underlying reasoning exposed by my research. Prompted by my advisor, I decided to focus on the interesting dilemma faced by traditional museums, as they try to interact meaningfully with their visitors while making the preservation and protection of their collection their ultimate priority.

To help visitors understand this exhibit as a potential future reality, I chose the Metropolitan Museum of Art as the conceptual user of these sensory adaptations. Both the museum and the works of art were chosen as accessible, familiar pieces to appeal to a wide audience. The space and the works would be the foundation for the visitors' new experience with multisensory gallery elements.

Designing the space was a hugely important part of the efficacy of this project. I studied images of galleries from the Met and recreated the room molding and flooring. The bright red of the walls is a nod to the branding for the Met as well as a way to attract visitor attention. This environment, though part of a repurposed high school, is transporting, and allows visitors to fully realize the exhibit as an experience rather than simply an artifact.

The multisensory elements were thoughtfully selected from the content of the works, encouraging visitors to touch, listen to, and smell elements from the works. Visitors have autonomy over how they use the multisensory elements and can imagine themselves into the works. The elements that allow visitors to touch the impasto of Van Gogh's work or

the contours of a sculpture come from my own childish desire to touch priceless works of art. I hope that these elements encourage visitors to be playful in their interactions.

One of the most striking pieces of research I came across highlights Western cultures' view of non-ocularcentric senses as being primitive and emotional. I hope that the multisensory elements capitalize on this bias, allowing visitors to connect and learn in personal, emotional ways.

PROJECT IMAGES

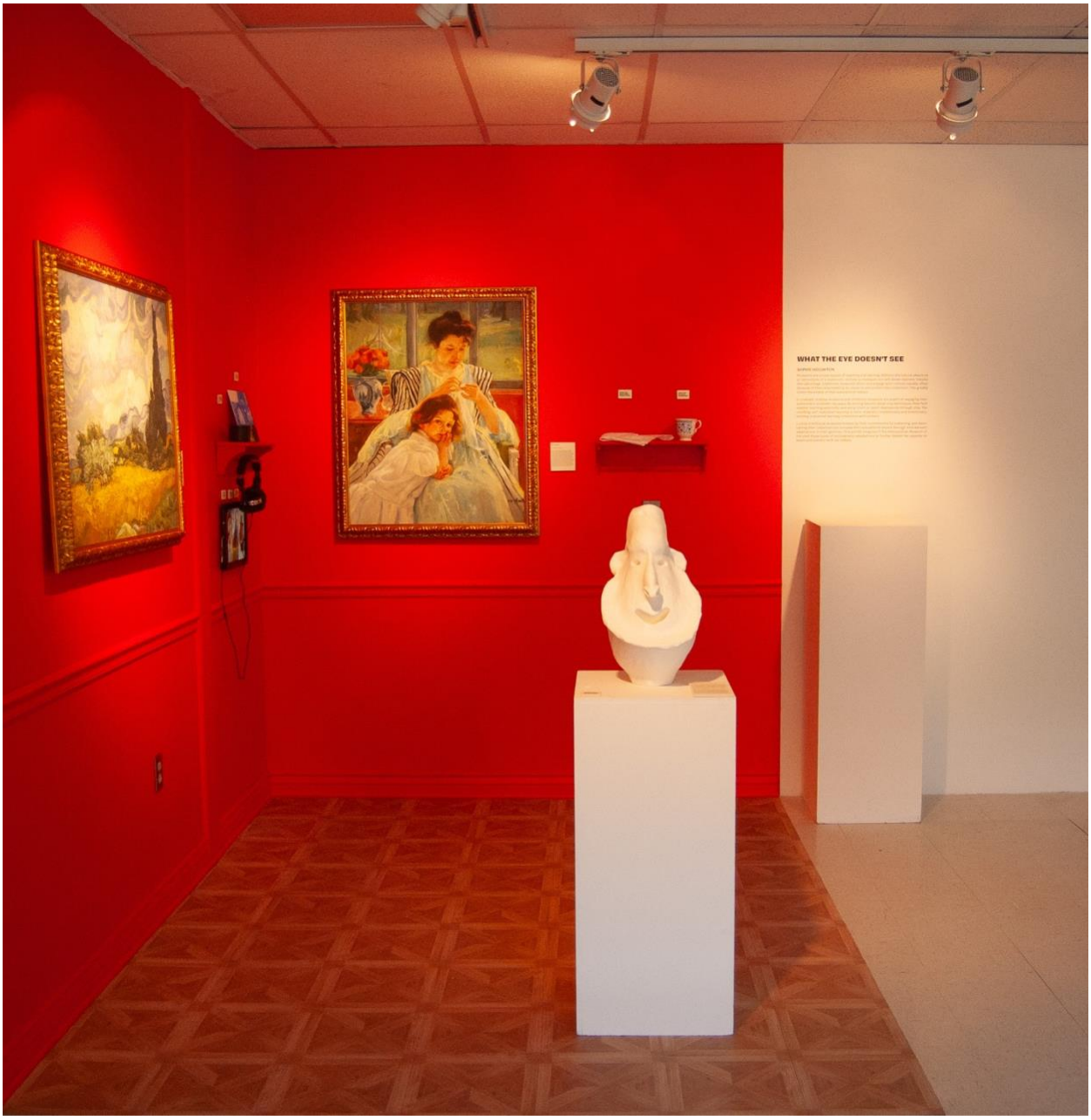
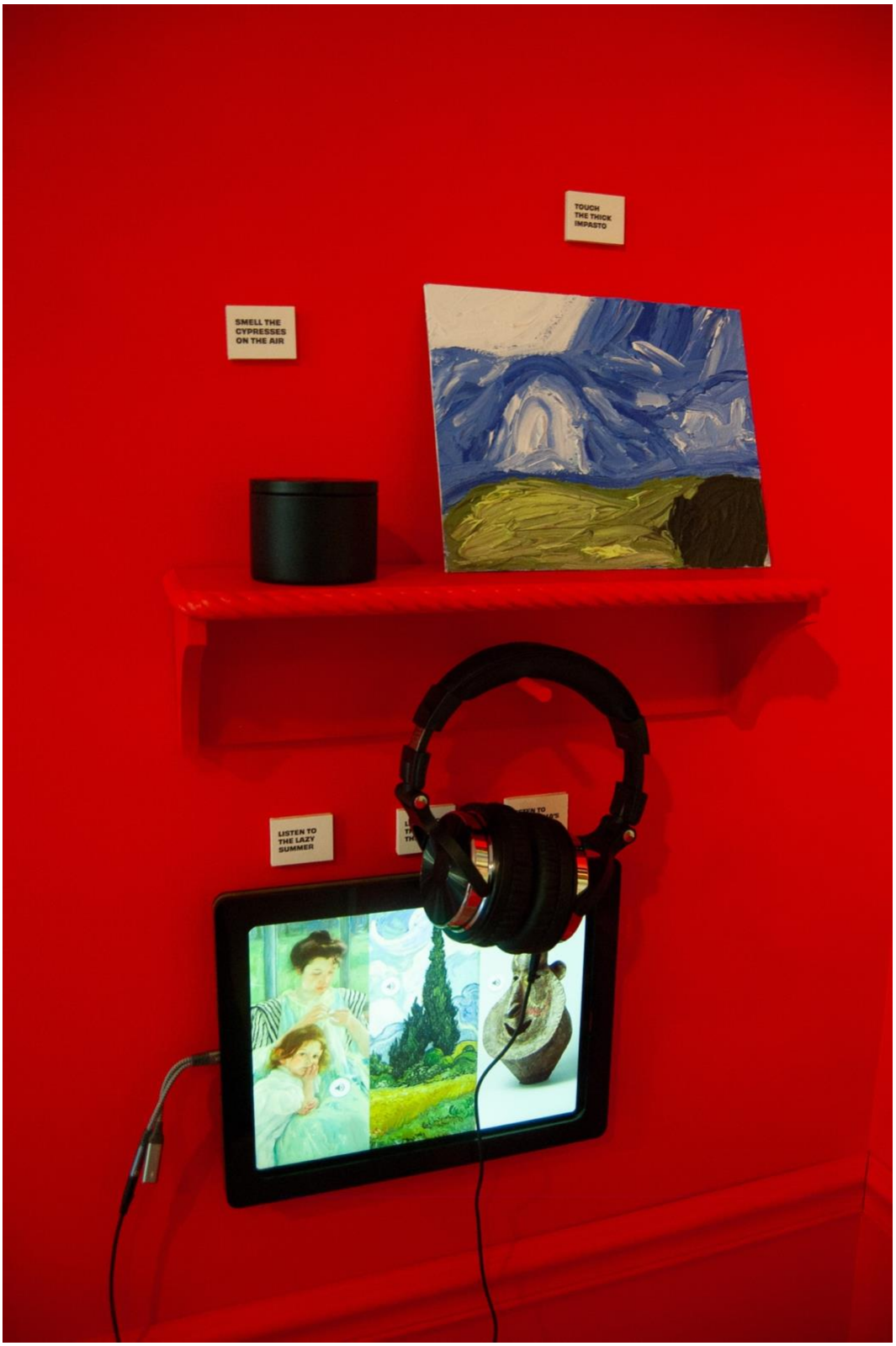


Exhibit space West view.

Exhibit space South view.

3D printed model of Head for Yam Ceremony (Yena) *as touch object*.



Scent cannister with cypress essential oil and impasto touch object on shelf. Audio interface and headphones below. The audio interface allows visitors to listen to environmental soundscapes corresponding to the paintings, and a Kwoma chant that corresponds with the sculpture.

Visitors using scent cannister, audio soundscape, and sculpture touch object.

Visitor using impasto touch object.

Visitors using soundscape and muslin touch object.

DISCUSSION

Recreating a gallery from the Metropolitan Museum of Art with theoretical multisensory elements was a daunting task. Since I am interested in a career in exhibit design, this experience was incredibly valuable. As mentioned in the Methodology section, creating the environment was a much larger piece of this project than I had expected from the beginning. In the finished space, this effort was effective, creating a unique experience within the 1313 gallery.

In individual feedback from visitors to the gallery, this exhibit was thought-provoking. Visitors mentioned wishing all exhibits were like this, even for adults. They made connections to hands-on science museums and mentioned enjoying working through the sensory elements. This is an indicator of success, as I hoped this exhibit would prompt thought in visitors and let them experience how impactful multisensory learning can be.

This project may have been improved by creating an exhibit with thematically linked works, such as a professionally curated exhibition would be. This would allow the multisensory elements to be even more deeply integrated into the concept behind the exhibit. In addition, further research, either through physical exhibits or studies, might directly compare ocularcentric exhibit experiences and learning with multisensory exhibit experiences. Both numerical results and written responses would be enlightening.

This exhibit in conjunction with the research I compiled and analyzed represent an effective overview of this field of research. Through working on this project, I have identified personal areas of research interest that I hope to further pursue in the future.

The combination of learning, multisensory experience, and experience design gives me many questions and much excitement.

CONCLUSION

This work represents a six-year-long fascination that led me to design as a major and a career. My experience working in local museums, attending an experiential graphic design conference, and interviewing professionals in this field have taught me much about the workings of museums and exhibits. This project is also the culmination of my time in the Honors Program, a precious experience, and one that has taught me to solve problems in new ways. Museums are a perfect example of the interdisciplinary, combing content, design, education, technological innovation, and countless other fields.

Through this experience, I have stretched myself to think and design in new ways, working with beloved faculty and family to conceptualize the practical application of my research. Effectively representing an exhibit with multisensory elements has only led me to further questions and ideas that I hope to research, write about, and perhaps one day realize. I cherish this experience of this project, as well as the written and physical results, and hope it has led those who have come in contact with it to consider multisensory learning in a new way.