ACCESSING ART THROUGH TECHNOLOGY:

DIGITAL TRANSFORMATIONS AND THE UNIVERSITY ART MUSEUM

By

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CAPSTONE ABSTRACT

Accessing Art Through Technology:

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The evolution of the Internet and the innovation of digital technology have provided a forum for sharing knowledge on a global scale, enabling museums to provide unprecedented access to humanity's cultural heritage. Through online publishing of museum collections, works of art that have been inaccessible to all but a few are now discoverable by a worldwide audience. The virtual presentation of art has had a profound influence on both public and academic museums. The authoritative voice of the museum is being challenged by the voice of the public with the desire to democratize knowledge of a work of art through online channels. Presenting cultural heritage through digital technologies has challenged the museum's ability to remain relevant as a physical location in a digital society. The transformation of the public's relationship with art through technology is motivating museums to reconsider their mission and meet the demands of a growing online community.

The challenges and opportunities presented in online access to art will be considered through the examination of six university art museums, with collections diverse in size and content and all at various stages of virtual access to their collections.

A review of the mission and philosophy of each museum; the concepts of the museum's authoritative voice, communal knowledge, and public democratization; the demand for interactive experiences and open access; the merging of teaching with works of art in the original form with further exploration through digital technologies; accessibility and findability; and ontologies and folksonomies will be addressed. A series of discussions with museum professionals facilitated comprehending how technology can augment the traditional learning methods and enhance the experience of viewing a work of art and its context that cannot be achieved in a gallery setting. Experiencing a work of art in a physical space is clearly superior to viewing its digital counterpart. However, if the work of art is physically and virtually inaccessible, it is essentially invisible to the public. Technological innovation has enabled museums to share art with the world. Museums are embracing the technology and accommodating their dual audiences – of student and global public - by transforming from a traditional environment to include the digital space and educating and engaging visitors across the globe through art.

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Introduction

> Digital access, in theory, also holds the potential to democratize
> discussions about art, subverting the traditional notion that the
> voice of a museum is authoritative.
>
> ~Bryan Just[1]

The invention of the Internet and the development of digital technology has internationally connected us and provided a platform for museums to share knowledge of their collections on a global scale. Museums are utilizing this technological innovation by digitizing their collections and providing unprecedented access to works of art for an online community – some of which have never been viewed by the public. The virtual presentation of humanity's cultural heritage is having a profound influence on both public and academic museums and is transforming the public's relationship with art. The authoritative voice of the museum is being joined by the democratized voice of the public – a public who is embracing their role as participants in augmenting the discovery of art in the digital realm. The use of digital technology with a web interface is enhancing a museum's ability to promote their holdings to an online audience. Audiences are realizing they have the ability to gain access to museum collections once they have been digitized and published on museum websites increasing their desire to access the full extent of a museum's holdings. This is prompting museums, particularly academic art museums, to reconsider their missions and resolve their ability to remain relevant as physical museums in a digital society. The traditional role of the academic museum, in providing educational experiences with the physical object as art in its original form, is being challenged by the virtual representation of their collections. Publicizing the

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[1] Bryan Just (Ph.D., Peter Jay Sharp, Class of 1952, Curator and Lecturer in the Art of the Ancient Americas, Princeton University Art Museum), interview by Janet Strohl-Morgan, November 2014.

contents of a museum's collection on a world-wide scale has increased traffic through the museum doors as well as increased the desire for online interaction with a work of art and its surrounding context. The impact of providing virtual access to art through technology to a global public will be examined through the lens of the university art museum.

Context

According to the International Council of Museums, a museum is defined as "a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment."[2] Academic art museums are the epitome of this definition and exist to educate as well as protect our heritages and cultural legacies through art. Entering an academic museum allows visitors to immerse themselves in culture and experience humanity across continents, civilizations, societies, and time – to understand our world, examine our history, and work towards a better future. The museum is "meant to incorporate all who would become part of our shared cultural experience. Any citizen can walk into a museum and appreciate the highest achievements of his culture. If he spends enough time, he may be transformed."[3] Academic museums display "what the past has accomplished for them to imitate and succeed."[4]

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[2] ICOM, "Museum Definition," *International Council of Museums*, 2010-2015, http://icom.museum/the-vision/museum-definition/.

[3] Edward P. Alexander and Mary Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums* (Plymouth: UK AltaMira Press, 2008), 1.

[4] Ibid., 37.

Physical and Virtual Access – The Authoritative Voice and Democratization

 Historically, anyone interested in viewing and learning about an academic museum's collection, had to physically visit the museum and were limited to viewing works of art on display, which usually comprises of "between two and four percent of a collection."[5] Although, with permission, scholars and students had deeper access to works of art during agreed upon time frames, discovering these works often proved difficult or even impossible. For example, having the knowledge of what comprises a collection is invaluable to a faculty member wishing to teach from the collection. Traditionally, this often meant meeting with a curator and reviewing the physical accession cards (similar to a library's card catalog) with or without images and typed or hand-written descriptions of the object being described. Simply searching for all works of art by subject term in an analog environment was nearly impossible and often did not uncover what was desired. Once the ability to search digitally became available, audiences beyond the university community began to request access. Academic museums are being challenged by the visitor's desire to view and research works of art that are physically invisible to the public and behind closed doors yet discoverable through museum websites.

 Technological advancements have enabled museums to provide access to these invisible works of art. However, not all academic museums have been able to utilize this technology to its fullest extent. Traditionally, "U.S. museum professions have discussed the curatorial voice" and the "sense that an exhibition was to reflect a single authoritative perspective," only providing access to collections information that had been approved by

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[5] Geraldine Fabrikant, "The Good Stuff in the Back Room," *New York Times*, March 12, 2009, http://www.nytimes.com/2009/03/19/arts/artsspecial/19TROVE.html?page wanted=all& _r=0.

a curator representing the museum's authoritative voice.[6] The desire for curatorial

approval before access is given to an object and its existing scholarship is a policy that

many museums have reconsidered. With the volume of art in many collections, waiting

for full curatorial approval for all works in a collection, could potentially take years to

publish and therefore would remain invisible to the public. Even when the policies are

overturned to publish all works of art, often times the information about the work remains

in analog format waiting to become a priority or for the funds to be digitized and

published online.

Many museums have launched digital campaigns and made it a priority to digitize

all works of art and their attendant analog scholarship. Museums are "increasingly

posting pictures of their holdings on the Web, providing an invaluable index of what is

behind closed doors."[7] This also provides the means to access information relating to

works of art whether or not it has been approved by the curator and without a control

mechanism on how this information will be utilized. For example, the Princeton

University Art Museum modified their policy from 'publishing a work of art on the

website if it has an image and when it has been approved by a curator' to 'publishing a

work of art with or without an image and with or without curatorial approval'.

Another challenge to the authoritative voice is the quality of the image. Museums

produce a digital image of a work of art in a controlled environment under optimal

conditions to be able to represent the work of art as close as possible. When performing a

simple image search on Google for 'Princeton Monet Water Lilies and Japanese Bridge',

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[6] Edward P. Alexander and Mary Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums* (Plymouth: UK AltaMira Press, 2008), 249.

[7] Geraldine Fabrikant, "The Good Stuff in the Back Room," *New York Times*, March 12, 2009, http://www.nytimes.com/2009/03/19/arts/artsspecial/19TROVE.html?page wanted=all& _r=0.

numerous images are displayed (figure 2) – all with varying colors to the original work of

art, yet none of the images match the Princeton image (figure 1).

Figure 1: Claude Monet, French, 1840–1926. Water Lilies and Japanese Bridge, 1899 Oil on canvas. 90.5 x 89.7 cm. From the Collection of William Church Osborn, Class of 1883, trustee of Princeton University (1914-1951), president of the Metropolitan Museum of Art (1941-1947); given by his family y1972-15.

Source: "About the Object," *Princeton University Art Museum.* Accessed August 30, 2015. http://artmuseum.princeton.edu/collections/objects/31852.

Figure 2: Google Image Search for 'Princeton Monet Water Lilies and Japanese Bridge'.

Source: "Google Image Search," *Google.com.* Accessed August 30, 2015. http://www.google.com/images.

When viewing an image other than the authoritative image, the site visitor is not

seeing the true facsimile of the work of art. Open access to images of art can alleviate this

issue by encouraging the visitor to use the authoritative museum image. For example

Princeton University Art Museum allows a 2000 pixel-wide download of images of

works of art in the public domain for educational purposes at no cost. The challenge lies

between the accuracy of the authoritative museum voice – text and image - and the desire

for the public to be actively involved in contributing to the knowledge of a work of art.

The Changing Needs of the Audience

All museums are grappling with the visitor's objective to see the entirety of their

collections and how to accommodate the demand for this access. The onsite visitor has

been joined by an online visitor with the desire for participatory technology-driven

experiences in an interactive learning environment with a universal community in a

collaborative global digital space. "People are eager for more interactive arts experiences,

rather than passively reading or viewing. That is to say, they are attracted to the idea of

being able to tailor their arts experiences to suit their personal tastes."[8] In an academic

museum, these experiences are designed to cater to both the university student, studying

specific works of art or researching the collection, as well as the wider community

audience, who may be experiencing the museum for disparate purposes. Academic

museums emphasize teaching and research from works of art in the original and they

understand the "need to connect with visitors in ways that prioritize public learning and

advanced forms of literacy."[9]

In the "academic world digital technology began early on to have a transformative

impact," and has changed the way a museum can provide access to its collections thereby

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[8] David Poole and Sophie Le-Phat Ho, "Digital Transitions and the Impact of New Technology On the Arts," *Canadian Public Arts Funders Network* (2011): 49, http://www.cpaf-opsac.org/en/themes/documents/digitaltransitionsreport-final-en.pdf.

[9] Wayne G. Clough, "Best of Both Worlds: Museums, Libraries, and Archives in a Digital Age," *Smithsonian Institution* (2013): 4, http://www.si.edu/content/gwc/BestofBothWorldsSmithsonian.pdf.

changing the way we discover, educate, interact with, interpret and share knowledge about art.[10] Technological tools are available that will enable museums to not only share their authoritative knowledge with the public, but also allow interaction with the public in sharing opinions and collaborating with the curatorial voice – in a sense 'democratizing' the knowledge about a work of art. "Enhanced access by more individuals means greater use and benefit and leads in turn to new knowledge."[11] It is important to consider the impact technology has on a museum's ability to provide discoverability to works of art in their collections in order to meet the challenges and embrace the opportunities of using technology to provide transformative educational experiences to students, scholars, and a global public. Academic museums are examining their missions and reconsidering the traditional passive learning methods to provide for the changing character of the university student and general museum audience in order to remain relevant in today's digital society.

Methodology and Scope

To comprehend the impact technology has on access to art and to appreciate its importance in art education, an exploration of six American academic museums in research universities will be examined. The museum mission statement and philosophy of virtual access through digital technologies will be considered. Conversations and interviews with museum professionals will provide insight into current challenges and opportunities that global access represents. Existing academic papers and scholarly documentation will also be analyzed.

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[10] Ibid.
[11] Karl Kusserow (Ph.D., John Wilmerding Curator of American Art, Princeton University Art Museum), interview by Janet Strohl-Morgan, December 2014.

Recognizing the enormity of this subject and the many challenges presented by digitally publishing collections content, it is acknowledged that the community of museums addressing these challenges is global. Not all challenges will be addressed in this paper including rights and reproductions; funding; and technological specifics.

A Brief Relevant Technological History

> Going digital may be the most significant inflection point in the history of human record keeping. Never before has so much information been available to so many people.[12]

Digitization

Digitization[13] was the first step in the transformation from a static museum to an interactive online experience. The act of digitizing art collections for online access began in the 1990s when major funding sources, such as the Getty Grant Program and the Annenberg Foundation were enabling museums to digitize their collections and publish them to the World Wide Web. For example in 1998, the Getty Grant Program awarded forty-two thousand dollars to the Hammer Museum at the University of California in Los Angeles, for "the planning of an electronic catalogue of the collections" through the *Electronic Cataloguing Initiative*.[14] In 1995, the Annenberg Foundation awarded four million dollars to the Metropolitan Museum of Art to "help the museum and its art education programs advance more rapidly into the digital age."[15] The funding allowed for

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[12] Richard N. Katz and Paul B. Gandel, "The Tower and the Cloud and Posterity," in *The Tower and the Cloud: Higher Education in the Age of Cloud Computing*, ed. Richard N. Katz, 2008, 186, https://net.educause.edu/ir/library/pdf/PUB7202.pdf.

[13] For information regarding the first digital camera, please reference http://lens.blogs.nytimes.com/2015/08/12/kodaks-first-digital-moment/

[14] "Online Grant Database," *The Getty Foundation*, 2015, http://www.getty.edu/foundation/grants/?rpp=10&query=hammer&page=3.

[15] The Annenberg Foundation, "Fifteen Years of Advancing the Public Good," *The Annenberg Foundation*, 2005, http://www.annenbergfoundation.org/about-foundation/our-story/15th-anniversary-report.

"new space for the Center for Imaging and Photography, improved its in-house digitizing system, and threaded a fiber optic network throughout the museum."[16]

The Platform

In the "1990s the Internet emerged as a public communications medium" and began to become a part of America's social life and modus operandi.[17] The World Wide Web "completed the Internet's transformation from a research tool to a popular medium by providing an application attractive enough to draw the masses of potential Internet users into active participation" providing a "system of information sharing."[18] In 1993, with the development of Mosaic, "an improved Web browser that included color images as part of the Web page," museums began to create their first generation websites and took advantage of these tools by publishing passive content online to market their museums with information such as visitor guidance, current exhibitions and programming, and descriptions of their collections.[19]

Museum websites began as static texts with a few image highlights such as can be seen on the *Internet Archive Wayback Machine* of a snippet of the 2000 version of the Zimerli Art Museum at Rutgers University (figure 3).[20]

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[16] Ibid.

[17] Janet Abbate, *Inventing the Internet*, (Cambridge: Massachusetts The MIT Press, 1999), 181.

[18] Ibid., 217.

[19] Ibid.

[20] "American Art," *Internet Archive Wayback Machine*, 2000, https://web.archive.org/web/20010202204800/http://www.zimmerlimuseum.rutgers.edu/collections/americanart.shtml.

Figure 3: Web archive of the Zimmerli Museum at Rutgers University web page.

Source: "Zimmerli Art Museum: American Art," *Internet Archive Way Back Machine*. Accessed August 30, 2015. https://web.archive.org/web/20010202204800/ http://www.zimmerlimuseum .rutgers.edu/collections/americanart.shtml.

From the early websites to today, museum website content began to transition from "the presentation of material by website providers to the active co-construction of resources by communities of contributors."[21] Museums were "becoming mediators of information and knowledge for a range of users to access on their own terms, through their own choice and within their own place and time." [22] Museum websites were evolving from "suppliers of information to facilitators, providing tools for visitors to explore their own ideas and reach their own conclusions."[23] Museum visitors were evolving from passive learners to actively engaged content explorers and generators. An example can be experienced on the current (2015) version of Harvard Art Museum's

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[21] Chris Dede, "A Seismic Shift in Epistomology," *educausereview*, May 7, 2008, http://er.educause.edu /articles/2008/5/a-seismic-shift-in-epistemology

[22] Lynda Kelly, "Museums as Sources of Information and Learning: The decision making process,*" Museums 1.0 to 2.0*, (October 17, 2012), http://makingconversation.wordpress.com/2006/10/17/museum- 10/.

[23] Ibid.

website (figure 4). A registered user is able to create personalized groups of objects.[24]

Another example can be experienced on the Princeton University Art Museum's website

(figure 5). Website visitors are invited to add information to a set of six thousand

Japanese Workshop paintings of which little information is known.[25]

Figure 4: Harvard Art Museums: Personal Collection.

Source: "Personal Collection," *Harvard Art Museums*. Accessed August 30, 2015.
http://www.harvardartmuseums.org.

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[24] "Browse Our Collection," *Harvard Art Museums*, 2015, http://www.harvardartmuseums.org/collections.

[25] "Japanese Workshop Art," *Princeton University Art Museum*, 2015, http://artmuseum.princeton.edu/object-package/japanese-workshop-art/42944

Figure 5: Princeton University Art Museum: Contribute to the Record.

Source: "Contribute," *Princeton University Art Museums*. Accessed August 30, 2015. http://artmuseum.princeton.edu.

Museums are now beginning to grapple with the challenge of the notion of the semantic web and linked open data. The semantic web is a "web of data that can be processed directly or indirectly by machines" while "linked data provides the means to create the semantic web or web of data."[26] When linked data is "published, numerous individuals and groups have contributed to the building of a web of data, which can lower the barrier to reuse, integration and application of data from multiple, distributed and heterogeneous sources."[27] To further explain, the semantic web "provides a common framework that allows data to be shared and reused across application, enterprise, and

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[26] Christian Bizer, Tom Heath, and Tim Berners-Lee, "Linked Data – The Story So Far," *Tom Heath*, n.d., http://tomheath.com/papers/bizer-heath-berners-lee-ijswis-linked-data.pdf.
[27] Ibid.

community boundaries."[28] Information about museum collections can be presented in open format or linked open data to the semantic web enabling connections to a work of art beyond a museum's own virtual space.

Accessibility

According to the International Council of Museums, "visibility in society and public accessibility are the main concerns for museums."[29] Academic museums are challenged by the ability to publish their entire collection online. If the entirety of a collection is not online, a site visitor may have the impression that non-published works do not exist in the museum's collection. It can "appear that if something is not visible, people question the justification for its existence and, in our society today, visibility is inextricably linked to the Internet."[30]

In addition, simply publishing a museum's collection online is not enough. "A simple image without up-to-date, vetted curatorial information remains merely an image with significantly less potential to engage and teach."[31] Search terms will allow specific works of art or groupings of objects to be discoverable or 'findable'. As defined by Peter Morville, findability is:

1. The quality of being locatable or navigable.
2. The degree to which a particular object is easy to discover or locate.
3. The degree to which a system or environment supports navigation and retrieval.[32]

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[28] "Semantic Web," *WC3*, (2013), http://www.w3.org/2001/sw/.

[29] Niels, Einar Verium and Mogens Fiil Christensen, "If it's no on the Net it Doesn't exist," *Museum Management and Curatorship*, (2011): 26:1, 3-9. http://www.tandfonline.com/doi/pdf/10.1080/ 096477 75.2011.540123.

[30] Ibid.

[31] Bryan Just (Ph.D., Peter Jay Sharp, Class of 1952, Curator and Lecturer in the Art of the Ancient Americas, Princeton University Art Museum), interview by Janet Strohl-Morgan, November 2014.

[32] Peter Morville, *Ambient Findability*, (Sebastopol: CA, O'Reilly Media, Inc., 2009), 1.1. http://pro quest.safaribooksonline.com.

Without good navigation, the online experience can be disappointing. In 2002, art historians found that searching for artists or works of art, "often ended in frustration" and were "useless."[33] If art historians were having problems finding works when the information was "written by and for art historians," the typical visitor was even more frustrated.[34]

To be findable, images of works of art are accompanied by metadata, "descriptive information used to index, arrange, file, and improve access to a library's or museum's resources," or there is no way to search for a particular object or group of objects.[35] Providing points of access to a collection can originate from the curator. However, to "make art collections more accessible, documentation needs to represent the perspective of others."[36] Classification systems can help identify the work of art and "facilitate understanding, influence identity, and claim authority."[37] Metadata is added to the record of the object so that when the image of the work of art is published online, the object will be findable whether classified through taxonomies and "ontologies of the Semantic Web or the folksonomies of social software."[38]

Taxonomies use controlled vocabularies of approved terms from authoritative sources such as the *Getty Vocabularies Art and Architecture Thesaurus*. Folksonomy is

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[33] Trish Rose, "Technology's Impact on the Information-Seeking Behavior of Art Historians," *Art Documentation: Journal of the Art Libraries Society of North America*, (Fall 2002): 38. http://www.jstor.org/stable/27949206.

[34] Jennifer Trant and Bruce Wyman, "Investigating social tagging and folksonomy in art," *Archives and Museum Infomatics*, (2006): 1-2, http://www.archimuse.com/research/www2006-tagging-steve.pdf.

[35] Peter Morville, *Ambient Findability*, (Sebastopol: CA, O'Reilly Media, Inc., 2009), 1.1. http://proquest.safaribooksonline.com.

[36] Jennifer Trant and Bruce Wyman, "Investigating social tagging and folksonomy in art," *Archives and Museum Infomatics*, (2006): 1-2, http://www.archimuse.com/research/www2006-tagging-steve.pdf.

[37] Peter Morville, *Ambient Findability*, (Sebastopol: CA, O'Reilly Media, Inc., 2009), 6.2. http://proquest.safaribooksonline.com.

[38] Ibid.

the "socially constructed classification system that results from social tagging – where 'tags' or keywords are supplied and shared on-line by the general public" allows the casual visitor to use social tags as identification that are meaningful to their search rather than being dependent upon the scholarly voice, which "offers additional means of access to art that could enhance and possibly subvert institutional perspective."[39] For example, searching on all works of art with an authoritative term such as 'ornamentation' as opposed to a user-generated term, such as 'blue necklace'. The ability to provide a social tag "bridges the gap between the professional language of the curator and the popular language of the museum visitor" and increases access points to a museum collection for greater 'findability' of the art.[40]

Online visitor participation with the use of user-generated terms is expanding the narrow window into the scholarly search of an object. Academic museum scholars are challenged by the notion of unvetted information being attached to a work of art. However the value in providing additional points of entry into a vast collection is invaluable to actually finding the work of art. Once the visitor is aware that the object exists, they can take the next steps necessary to view the physical object and discover its context and existing scholarship. The impact of the site visitor participating in describing a work of art, in this case, has augmented the ability to discover the work of art. Without being able to find what is being searched for, the object remains hidden and inaccessible.

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[39] Jennifer Trant and Bruce Wyman, "Investigating social tagging and folksonomy in art," *Archives and Museum Infomatics*, (2006): 1-2, http://www.archimuse.com/research/www2006-tagging-steve.pdf.
[40] Ibid.

The Teaching Museum of a Research University in America

The ability to provide global virtual access to museum collections can in theory, bypass the need for a visitor to physically visit the museum, subverting engagement with the authentic object. This is conflicting for University museums as they are considered academic research and teaching museums with missions to educate their student audiences through interrelating with art in original form. University museums are the "training ground for the nation's next generation of cultural leaders, the first engagement for many of our young with original objects and campus centers for interdisciplinary discussion."[41] The teaching museum provides an environment where students are able to interact with objects first-hand. University museums also have a mandate to cater to a disparate audience, which includes the university community, and a broader public audience. The digital space is being integrated into the communication with all of these various constituents.

This is evidenced by the Hammer Museum at the University of California in Los Angeles, the Harvard Art Museums, the Princeton University Art Museum, the University of Michigan Museum of Art, the Yale University Art Gallery, and the Zimmerli Art Museum at Rutgers University – six museums at research universities - three as part of private institutions and three as part of public institutions, with collections diverse in size and content, but facing the same challenges and opportunities incurred through technological advancement.[42]

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[41] "Great Universities have Great Museums," *Association of Academic Museums and Galleries*, 2012, http://aamg-us.org/wp/about-us/.
[42] Please see Appendix A for details about these museums.

All six museums are based on the philosophy of educating their students through access to original works of art "frequently referred to as interpretation or teaching through the use of original objects, emotionally engaging the visitor and complementing learning through words and verbalization" while also meeting the needs of their larger community audiences.[43] The idea of object-based teaching in its native form is at the base of these research university museums. All six museums have also made a concerted effort to publish their collections online with varying degrees of completeness. All are "institutions rooted in interpretation in its broadest sense, actively seeking to provoke thought and the exchange of ideas between the museum and its visitor."[44]

Considering the similarities and differences of several museums of the same type as well as their philosophies on digital access and status of their online holdings will help to answer the question of the impact global virtual access to art has on education and their dual audience of student and public.

Academic Museum's Use of Digitization and Its Impact on Education

> We live in a world where content is now available 24/7/365 on-the-go, from anywhere, right in your pocket. This means learning doesn't just happen during business hours. And learning is also becoming social, whereby everyone, users and experts alike, contribute to the discussion (i.e. user-generated content).
>
> ~Eric Longo[45]

"Information technology, along with new research in human behavior and brain science, will have a transformative effect on teaching and learning."[46] With the advent of

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[43] Edward P. Alexander and Mary Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums* (Plymouth: UK AltaMira Press, 2008), 7.

[44] Ibid., 10.

[45] Eric Longo (L.L.M., Executive Director of Museum Computer Network), interview by Janet Strohl-Morgan, November 2014.

digitization, academic museums are faced with challenges of how to adapt their methods

of teaching to incorporate this new technology that is taking the museum world by storm.

"It is already clear that online instruction will open the doors of learning for millions of

people . . . the social sciences and humanities should embrace the opportunity to reach

new audiences."[47]

  The pressure to provide such global access was beginning to take a strong

foothold in academic museums. "We are on the eve of a new age of teaching and

learning, the dimensions of which we can only begin to envision. There is no reason

liberal arts education cannot flourish in a new environment using new tools."[48] Faculty

and students want full access around the clock. Demand for access is being addressed in

the mission of the museum. For example, Princeton University Art Museum's strategic

planning process (with over 1600 participants) identified access – both physical and

digital – as a top strategic priority and states in their plan, "the Museum will provide

universal digital access to the collections as quickly as possible, including developing

strategies for, securing funds for, and investing significantly in more content-rich online

presentations of the collections."[49] In May of 2011, Yale University "announced a policy

of open access to its collections," which enabled the Yale University Art Gallery to

incorporate global digital access in its mission.[50]

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[46] Commission on the Humanities and Social Sciences, "The Heart of the Matter: The Humanities and Social Sciences: for a vibrant, competitive, and secure nation," *American Academy of Arts and Sciences*: 35, http://www.humanitiescommission.org/_pdf/hss_report.pdf.

[47] Ibid.

[48] Ibid.

[49] "Strategic Plan: 2014 – 2018," *Princeton University Art Museum*, (2014), unpublished.

[50] Kristin Kelly for The Andrew W. Mellon Foundation, "images of Works of Art in Museum Collections: The Experience of Open Access," *Council on Library and Information Resources*, 11, http://www.clir.org/pubs/reports/pub157/pub157.pdf.

Virtual access to a museum's collection is necessitating art educators to redirect their thinking to include the digital space. The authoritative voice is being "challenged" by the "democratization of museums and cultures."[51] Museums need to "shift from being repositories which offer visitors a passive experience primarily through their exhibitions and publications, to become institutions which encourage a more interactive role for visitors."[52] Museum educators are trying to accommodate the visitor's desire to interact with art and participate in the conversation.

Survey: How are museums adapting?

> There have been regular and profound changes in teaching art history over
> the past twenty years related to technology.
>
> ~Bryan Just[53]

Academic museum professionals in institutions such as the Hammer Museum at UCLA, Harvard Art Museums, Princeton University Art Museum, Michigan Museum of Art, the Yale University Art Gallery, and the Zimmerli Art Museum at Rutgers, are directly affected by the technological development of global access to collections. It is changing the way we educate and learn about art. A survey of a series of conversations with museum professionals and the data gathered in their responses, to address the consequences of Internet access to works of art has on teaching and learning about art, were for the most part consistent with the scholarly papers published in journals of the museum field.

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[51] Edward P. Alexander and Mary Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums* (Plymouth: UK AltaMira Press, 2008), 249.

[52] Besser, Howard, "The Changing Role of Photographic Collections with the Advent of Digitization," *Discussion Paper for Working Group for Digital Image in Curatorial Practice George Eastman House* (June 1994): 1, http://besser.tsoa.nyu.edu/howard/Papers/replaced/eastman.html.

[53] Bryan Just, (Ph.D, Peter Jay Sharp, Class of 1952, Curator and Lecturer in the Art of the Ancient Americas, Princeton University Art Museum) interview by Janet Strohl-Morgan, November 2014.

Just feels that global digital access has enhanced his teaching about art and that it "expands the notion of collections being in public trust to a global scale."[54] One of the concerns that a curator has is when the policy of the museum is to publish an object with or without an image and with all available data – whether or not a curator has approved it. Just's response to this was that "while full transparency and disclosure of holdings are on a basic level laudable, museums should contextualize their holdings in ways that help online users understand the objects from one or many perspectives."[55] Kusserow felt "more rather than less access is preferable, assuming it is made clear what information has been vetted and what has not."[56] Both felt publishing an accompanying image was imperative.

If an image is posted online without any accompanying information, it exposes the object to other scholars who can contribute to what the object may be - a feat not possible, if the object is hidden in a storeroom. Longo felt that as "stewards of humanity's treasures, museums still have a duty to provide basic contextual information about their collections in a way that helps users understand their relevance in history and meaning."[57] Longo agreed that "accessing a work without an image is not very valuable in our day and age."[58]

Curators, such as Just and Kusserow, who recognize the benefits, use technology in teaching about objects. The technology enables the students to see more defined and magnified views of objects leading to more fully understanding the perspective of the

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[54] Ibid.

[55] Ibid.

[56] Karl Kusserow, (Ph.D, John Wilmerding Curator of American Art, Princeton University Art Museum) interview by Janet Strohl-Morgan, December 2014.

[57] Eric Longo, (L.L.M., Executive Director of Museum Computer Network) interview by Janet Strohl-Morgan, November 2014.

[58] Ibid.

artist at the time of creation. (For example, the brush strokes are visible on an oil painting in high-resolution images.)

The traditional passive learning methods have evolved through technology to interactive learning experiences in the classroom and in the gallery as well as online. As Longo states:

> Never forget technology is a tool. It solves problems and makes our lives easier. The actual learning, critical thinking skills, debating ideas, questioning assumptions and deriving insights from ingesting various amounts of materials still happens in the human mind. And effective teachers play a critical role in facilitating the learning for students and eliciting insights.[59]

Technology is a tool that can and does enhance teaching about art. Bringing the audience into the conversation and eliciting responses to an object through online interactivity, viewing the object from different angles or zoomed in, and being able to view more information about an object prior to or after a physical visit to the museum augments knowledge and gives one a deeper understanding of the object and its social context. Using the opportunity to develop pedagogy with the "countless images of works of art that the new technologies are making available" is a challenge that once met will enhance teaching about art in "linking the future to the past."[60]

The discussions with museum professionals regarding how technology has affected teaching has provided an understanding that technology can enhance the learning experience, pre-, during, and post- visit by providing educational resources online. All three were in agreement that the use of technology does not take away from being in the

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[59] Ibid.
[60] Cohen, K., Elkins, J., Lavin, M. A., Macko, N., Schwartz, G., Siegfried, S. L., and Stafford, B., M. Digital, "Culture and the Practices of Art and Art History," *The Art Bulletin*, (June, 1997): 191, http://www.jstor.org.proxy.libraries.rutgers.edu/stable/3046243.

presence of the object but rather enhances the experience by adding an additional layer to the physical didactics (such as the label on the wall) for further exploration which cannot be achieved in a gallery setting. All three were also in agreement that digital access to art facilitated their ability to gather works of art to use in their research and teaching as well as being able to interactively share information about the art with their students.

Philosophy of Adoption

Art museums began to adopt digitizing the collection as part of their mission and integrating it into every day operations. Universal museum conferences increasingly added sessions to address the issues surrounding creating, accessing, managing, and preserving digital content. One of the early conferences was a workshop in 2006 funded by the Getty Research Institute, entitled *Art History and the Digital World*, which discussed how "digital technologies have the potential to deepen and enrich traditional scholarship and may enable entirely new lines of research."[61] The conference identified the need for collaboration between museums and museum organizations to determine technological tools and ways to enhance searching through social tagging and folksonomy. It was felt that "most art museum collections remain largely inaccessible online."[62] Conferences such as these have grown and continue today for museums to collaborate to find solutions to provide not only the ability to access collections online but to be able to enhance the user experience in search and discovery of works of art. Museums are not only accepting the technological changes, they are embracing them.

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[61] Baca, Murtha and William Tronzo, "Art History and the Digital World," *Art Journal*, (Winter, 2006): 52. http://www.jstor.org.proxy.libraries.rutgers.edu/stable/20068498.
[62] Ibid.

Impact on Relevance

Presenting cultural heritage through digital technologies has challenged the museum's ability to remain relevant as a physical location in a changing society. Meeting the needs of on-site and online audiences in a fast-paced digital world, that has become intertwined in our daily lives, has created concerns that visitors would stop visiting museums once they had access to objects online. As Just states, "some fear that digital access might replace the experience of seeing original works of art in person, but attendance numbers and such do not support this."[63]

Academic museums are utilizing the technology to resolve their ability to remain relevant. For example, Harvard Art Museums adopted a new policy with the opening of their new building in November 2014. They built an Art Study Center that reaches beyond the university audience and provides open access to the public and allows "visitors to request objects not currently on display in the galleries, facilitating self-directed teaching and learning from works in all media" and allowing "close looking" with original works of art.[64] The intended visitor must use the museum's website to request access to the Art Study Center and create a 'collection' of a work or works of art of what they hope to view in person. The new Art Study Center has already proved to be popular since it opened. In a snapshot of use, in April 2015, "nearly two hundred and fifty visits were made to the Art Study Center and nearly three hundred visits were made

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[63] Bryan Just, (Ph.D, Peter Jay Sharp, Class of 1952, Curator and Lecturer in the Art of the Ancient Americas, Princeton University Art Museum) interview by Janet Strohl-Morgan, November 2014.

[64] "Art Study Center," *Harvard Art Museums*, (2015), http://www.harvardartmuseums.org/teaching-and-research/art-study-center.

to all non-gallery art viewing spaces."[65] In this case, the visit began with virtual searching

of Harvard's collection to enable physical access for in-depth viewing of the work of art.

This demonstrates that "despite the range of content on offer, art on the Internet does not

replace the live experience, particularly for those with a moderate or high level of interest

in the arts."[66]

Another example of this was illustrated in a personal conversation with five

cousins between the ages of nineteen and twenty-six and representing the public museum

visitor (rather than the scholar) discussing viewing a collection online versus onsite. All

five felt that one needed to visit a museum in person but that it was also important to give

access to the collection online. They agreed that online access entices rather than

discourages people from visiting a museum's collection and viewing its physical

objects. Just agrees with this philosophy in that "part of what people enjoy about visiting

museums is the sense of surprise and discovery that occurs with the unexpected work of

art."[67]

Partnership of the Physical and the Virtual

The tremendous progress in technological advancement has enabled works of art

to be universally accessible to anyone with a computer and the Internet. With less than

ten percent in the galleries, digital access has enabled the invisible ninety percent in

storage and study rooms to become visible to the global public. Online access allows

"museums to reach many more visitors than they would ever welcome through their

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[65] Jeff Steward, (Director of Digital Infrastructure and Emerging Technology, Harvard Art Museums) in discussion with museum professionals, August 2015.

[66] Poole, David, and Sophie Le-Phat Ho, "Digital Transitions and the Impact of New Technology On the Arts," *Canadian Public Arts Funders Network* (2011): 49, http://www.cpaf-opsac.org/en/themes/documents/digitaltransitionsreport-final-en.pdf

[67] Bryan Just, (Ph.D, Peter Jay Sharp, Class of 1952, Curator and Lecturer in the Art of the Ancient Americas, Princeton University Art Museum) interview by Janet Strohl-Morgan, November 2014.

doors." [68] All six museums have leapt into the digital world and provide varying degrees of digital access on their museum websites. [69]

Harvard Art Museums and the University of Michigan Museum of Art have most if not all of their collections online. Both had a few areas of records without images. Yale University Art Gallery's website has approximately 150,000 of their 200,000 object online. Princeton University Art Museum's website has approximately 50,000 of its 92,000 works online. The Hammer Museum at UCLA and the Zimmerli Museum at Rutgers websites both include highlights in each of their collecting areas. The Hammer Museum at UCLA is also a part of the *Online Archive of California* which includes some of their works. All six museums had varying degrees of scholarly information accompanying the objects.

All six universities provide additional access to their collections through a variety of art aggregators such as Google Cultural Institute's Art Project (Harvard, Michigan, Princeton and Zimmerli), ARTstor (Harvard, Princeton, Yale, and Zimmerli), Art Resource (Harvard, Princeton and Zimmerli), and Artsy (Hammer, Princeton and Yale, Zimmerli). As teaching museums, all six museums share the philosophy that the digital representation of the original work of art does not replace the learning experience that can only be realized in the presence of the artwork, but rather enhances it. There is "a place for both the physical and the digital, with one complementing and leveraging the other."[70]

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[68] Edward P. Alexander and Mary Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums* (Plymouth: UK AltaMira Press, 2008), 296.

[69] This data was derived from the museum websites: http://hammer.ucla.edu/, http://www.harvardartmuseums.org/, http://www.umma.umich.edu/, http://artmuseum.princeton.edu, http://artgallery.yale.edu/, and http://www.zimmerlimuseum.rutgers.edu/.

[70] Wayne G. Clough, "Best of Both Worlds: Museums, Libraries, and Archives in a Digital Age," *Smithsonian Institution* (2013): 4, http://www.si.edu/content/gwc/BestofBothWorldsSmithsonian.pdf.

In 1997, an article discussing the impact of digitization in terms of "changes to the museum and how they are perceived" asked the question, "as more and more museum information becomes available across the Internet, will people begin to forego the experience of actually visiting a museum?"[71] Throughout the research conducted for this paper, time and again, it was stated that this is not the case. Although many factors are a part of this statistic, museum "attendance grew by 90% over the past twenty-five years, according to a study conducted in 2009 by Janet Meredith, a cultural consultant" – which is during the time the technology to provide global access was being developed.[72] Although a direct correlation cannot be drawn, it implies that digital access has not negatively affected attendance.

By providing access to a museum's collection, online visitors are enticed to visit the physical museum. Museums have become community spaces as well as learning environments that provide an atmosphere that encourages interaction with each other as well as with the art. In-gallery technology, such as the ability to magnify or rotate an object on an iPad, a listening tour on a smart phone, or simply a video explaining the work, enhances the user experience. It is understood that the virtual reproduction is not a substitute for the original work of art as "all reproductions more or less distort, and that therefore the original painting is still in a sense unique."[73] All works of art are worthy of being viewed in their original form. Providing access to art online is not replacing the

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[71] Howard Besser, "The Transformation of the Museum and the Way it's Perceived," *School of Information and Systems, University of California at Berkley*, (1997), http://besser.tsoa.nyu.edu/howard/Papers/garmil-transform.html.

[72] "Museum Succession in America: Onwards and Upwards," *The Economist*, (2015), http://www.economist.com/news/books-and-arts/21650523-more-third-american-art-museum-directors-are-retirement-age-those-charge

[73] John Berger, *Ways of Seeing*, (British Broadcasting Corporation and Penguin Books: London. 1972), 20.

desire to view the physical object, but rather enabling the discovery of entire collections

illustrating that the virtual is augmenting the physical.

The Authoritative Voice and the Public in the Digital Realm

Academic museums are opening access to their collections in the online space and

involving the public voice and recognizing that the "inclusion of multiple voices is not a

threat to the integrity of the museum or the authority of its scholarship."[74] The online

community "presents an opportunity for democratization of interpretation" and provides a

"fuller representation of multiple perspectives."[75]

In a conversation with museum colleagues a discussion ensued around the idea of

whether or not the online visitor should be presented with curated experiences or the

ability to create their own experience in order to draw their own conclusions. The

Princeton University Art Museum's website has provided the ability for a "curated or

framed experience" for the online visitor with plans to "provide the ability to create

galleries of works of art" to encourage personal interaction with the collection.[76] The

Harvard Art Museums' website provides "layers of programs – some dictating a

prescribed path while others let visitors define their own path".[77] The Harvard Art

Museums' website also provides the ability to create personal galleries for online use as

well as to request objects in the Art Study Center (described in the section entitled

'Impact on Relevance'). These curated online experiences are enabling academic

museums to extend their educational reach across the globe.

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[74] Salwa Mikdadi Nashashibi, "Visitor Voices in Art Museum: The Visitor-Written Label," *The Journal of Museum Education*, (Fall, 2003): 28:3, 25, http://www.jstor.org/stable/40479306.

[75] Ibid.

[76] Cathryn Goodwin (Manager of Collections Information, Princeton University Art Museum) in discussion with museum professionals, August 2015.

[77] Jeff Steward (Director of Digital Infrastructure and Emerging Technology, Harvard Art Museums) in discussion with museum professionals, August 2015.

Some museums are also allowing the public to add to the curated or authoritative voice through social tagging which provides additional entry points to collections to increase discoverability of the object. For example, the Philadelphia Museum of Art allows the website visitor to add their own 'tag' to an object while the Hood Museum of Art at Dartmouth provides an email link to send "extra information about the object".[78] Interestingly, this is not yet the case for the museums examined. However, the Princeton University Art Museum has the practice of staff or interns adding to the social subject tags as works of art are catalogued into their collections database system for greater accessibility.

Museums are bringing the online space into the physical gallery to enhance and compliment the visitor's viewing of the physical object. The online space is also enabling access to a museum's collection for visitors who may never attain the means to visit the physical space of the museum. The digital realm is providing a space for the invisible ninety percent of a collection to be visible to alleviate the limitation of less than ten percent of the collection being on view in the galleries at any given time. This further illustrates the importance of providing virtual digital access to the entirety of museum collections.

Conclusion

It is clear that all museums have been impacted by technological innovation that has provided the ability to connect on a global scale. The ability to digitize a work of art and publish it to a museum's website has provided the means for a museum to share its entire collection beyond the physical constraints of its galleries.

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[78] "Follis," *Hood Museum of Art*, (2015), https://piction.dartmouth.edu/icons/images/oc/index.html?surl=1677528574ZZZSYGGMUIMK#d18606973.

Narrowing the scope to an exploration of six academic art museums at research universities and how they are managing the consequences of openly sharing digital images and information about their collections along with conversations with museum professionals, this paper has illustrated how museums are facing the challenge and seizing the opportunities provided by this global forum. Technological innovation and the development of the "Internet matters to museums because the information and educational needs of the world are changing" and academic museums are meeting the challenges by incorporating the virtual into their research and teaching practices providing the student, scholar, and global public with deeper scholarship, a wider swath of context, and the ability to discover the entirety of their collections – not just the miniscule percentage in the galleries. [79]

Indisputably, experiencing a work of art in the original is unparalleled by its digital counterpart. The "mechanical reproduction" as well as the online digital image of an original work of art loses its "aura."[80] However, the ability to understand a work of art more completely is enhanced by the technology. "Online access to digitized objects, images, and records is democratizing knowledge, enhancing the visits to the many who come to us in person, and extending our reach to the millions who cannot." [81]

The advancements in technology have provided the tools for sharing art with the world. It is changing the way we think about and experience art. Connections are being made between museums locally and across the globe. Digital access has made a positive

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[79] Deborah Seid Howes, *The Digital Museum: A Think Guide*, ed. Herminia Din and Phyllis Hecht (Washington D.C.: John Strand Publisher, 2007), 77.

[80] Benjamin, Walter, "The Work of Art in the Age of Mechanical Reproduction," *Philosophy Archive*, (1936): II, https://www.marxists.org/reference/subject/philosophy/works/ge/benjamin.htm.

[81] Clough, Wayne G., "Best of Both Worlds: Museums, Libraries, and Archives in a Digital Age," *Smithsonian Institution* (2013): 2, http://www.si.edu/content/gwc/BestofBothWorldsSmithsonian.pdf.

impact. Museums are embracing the technology, rather than being controlled by it as evidenced by Harvard Art Museums use of their website to bring the visitor to the Art Study Center (described in the section entitled 'Impact on Relevance'). Museum professionals are collaborating to create solutions to meet the demand for access and enable discoverability of art while involving their audiences in the process.

Academic museums are reconsidering their missions and are remaining relevant as physical museums in a changing society by enhancing the physical space with the virtual space and providing a participatory environment for discovering and sharing art. They are creating community spaces for students and visitors to interact socially around art. Museums are reaching a global audience and enriching visitor's lives – both on-site and online.

As the technology evolves, museums will continue to collaborate and communicate with their audiences. Although not discussed in this paper, social media, which is a part of most museums communication tools, has provided a forum for a two-way dialogue and communal interpretation. Open access, for both images and text, is beginning to become commonplace for many museums. Searching across collections across the globe is becoming a reality. Transformations due to technology are challenging every sector of our society. Museums are accepting the challenge, democratizing cultural knowledge, and humanizing our world.

Appendix A : About the Museums

Hammer Museum at the University of California in Los Angeles
(http://hammer.ucla.edu)

Mission Statement

> The Hammer Museum at UCLA believes in the promise of art and ideas to illuminate our lives and build a more just world.[82]

About and Philosophy

The Hammer Museum is a part of the School of the Arts and Architecture at the University of California in Los Angeles, which also includes The Fowler Museum and the Center for the Art of Performance. The Hammer Museum is comprised of four main collections – Hammer Contemporary Collection with "a growing collection of works on paper, painting, sculpture, and media arts"[83]; Armand Hammer Collection "featuring works of art from the sixteenth through the twentieth century of European and American paintings, sculpture, and works on paper"[84]; Grunwald Center for Graphic Arts "comprising more than 45,000 prints, drawings, photographs and artist's books dating from the Renaissance to the present"[85]; and Armand Hammer Daumier and Contemporaries Collection "comprising more than seventy-five hundred objects, including prints and drawings, paintings, and lithographs".[86]

The Hammer Museum "champions the art and artists who challenge us to see the world in a new light" and can "provide significant insight into some of the most pressing

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[82] "About Us," *Hammer*, (2015), http://hammer.ucla.edu/about-us/.

[83] "Hammer Contemporary Collection: About the Collection," *Hammer*, (2015), http://hammer.ucla.edu/collections/hammer-contemporary-collection/.

[84] "Armand Hammer Collection: About the Collection," *Hammer* (2015), http://hammer.ucla.edu/collections/armand-hammer-collection/.

[85] "Grunwald Center for the Graphic Arts," *Hammer* (2015), http://hammer.ucla.edu/collections/grunwald-center-collection/.

[86] "Armand Hammer Daumier and Contemporaries Collection: About the Collections," Hammer (2015), http://hammer.ucla.edu/collections/armand-hammer-daumier-andcontemporaries-collection/.

cultural, political, and social questions of our time".[87] The director Ann Philbin expresses

her commitment to "accessibility, education, and surprising people" as being "really

important to us".[88]

Harvard Art Museums
(http://www.harvardmuseums.org)

Mission Statement

> The Harvard Art Museums—the Fogg Museum (e. 1895), the Busch-Reisinger
> Museum (e. 1903), and the Arthur M. Sackler Museum (e. 1982)—advance
> knowledge about and appreciation of art and art museums. The museums are
> committed to preserving, documenting, presenting, interpreting, and strengthening
> the collections and resources in their care. The Harvard Art Museums bring to
> light the intrinsic power of art and promote critical looking and thinking for
> students, faculty, and the public. Through research, teaching, professional
> training, and public education, the museums encourage close study of original
> works of art, enhance access to the collections, support the production of original
> scholarship, and foster university-wide collaboration across disciplines.[89]

About and Philosophy

The Harvard Art Museums has an encyclopedic collection of approximately

250,000 works of art. In 1874, Harvard became the "first university in America to

institute a professorship in art history".[90] Thomas W. Lentz, the most recent Elizabeth

and John Moors Cabot director has reinvigorated the Harvard Art Museums, reopening

an expanded and enhanced facility in November 2014 which brought together "the Fogg,

Busch-Reisinger, and Arthur M. Sackler Museums under one roof, giving a

multidimensional platform to bring our great collections together with students, faculty,

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[87] "About Us," *Hammer*, (2015), http://hammer.ucla.edu/about-us/.
[88] "Director's Welcome from Ann Philbin," *Hammer*, (2015), http://hammer.ucla.edu/about-us/.
[89] "Mission," *Harvard Art Museums*, (2015), http://www.harvardartmuseums.org/about/mission.
[90] "History," *Harvard Fine Arts Library*, (2014), hcl.harvard.edu/libraries/finearts/history.cfm.

and the public" – again emphasizing the dual role academic museums play to both the

scholarly community and the public.[91]

Princeton University Art Museum
(http://artmuseum.princeton.edu)

Mission Statement

> The Princeton University Art Museum educates, challenges, and inspires the
> students of Princeton University and members of a diverse local, national, and
> international public through exposure to the world of art. Uniting fresh, object-
> based scholarship with broad accessibility, the Museum soothes and provokes,
> affirms accepted meanings and suggests new ones, excites the imagination, and
> affords encounters of both clarity and uncertainty. Intimate in scale yet expansive
> in scope, the Museum presents opportunities to delve deeply into the study of art
> and culture, offers a revitalizing experience of extraordinary works of art, and acts
> as a library of the visual and a gateway to the University's intellectual resources.[92]

About and Philosophy

Established in 1882, the Princeton University Art Museum has holdings of over

92,000 works of art. From the beginning, the museum's philosophy was "meant to serve

a dual purpose: to provide exposure to original works of art and to teach the history of

art".[93] James Christen Steward, the current Nancy A. Nasher-David J. Haemisegger,

Class of 1976, Director emphasizes the "commitment to advancing the teaching and

research mission" of the university "while serving as a gateway to the University" for the

public.[94]

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[91] "Director's Message," *Harvard Art Museums*, (2015), http://www.harvardartmuseums.org/about/
directors-message.
[92] "Vision and Mission," *Princeton University Art Museum*, (2014), http://artmuseum.princeton.edu/
about/vision-mission.
[93] "History," *Princeton University Art Museum*, (2014), http://artmuseum.princeton.edu/about/history.
[94] "Director's Welcome," *Princeton University Art Museum*, (2014), http://artmuseum.princeton.edu/
about/directors-welcome.

University of Michigan Museum of Art
(http://www.umma.umich.edu)

Mission Statement

> The University of Michigan Museum of Art seeks to transform individual and civic life by promoting the discovery, contemplation, and enjoyment of the art of our world.[95]

About and Philosophy

Directed by Joseph Rosa, the University of Michigan Museum of Art "contributes

to the academic mission of the University of Michigan".[96] The collection numbers more

than 18,000 works of art and "representing over 150 years of collecting at the

University," the museum caters to both an academic and public audience.[97]

Yale University Art Gallery
(http://artgallery.yale.edu)

Mission Statement

> The mission of the Yale University Art Gallery is to encourage appreciation and understanding of art and its role in society through direct engagement with original works of art. The Gallery stimulates active learning about art and the creative process through research, teaching, and dialogue among communities of Yale students, faculty, artists, scholars, alumni, and the wider public.[98]

About and Philosophy

Yale University Art Gallery was "founded in 1832 when the patriot-artist John

Trumbull gave more than one hundred of his paintings to Yale College".[99] Today the

collection numbers over 200,000 objects "representing Eastern and Western cultures and

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[95] "Mission," *University of Michigan Museum of Art*, (2010), http://www.umma.umich.edu /about-umma/mission.html.

[96] Ibid.

[97] "The UMMA Story," *University of Michigan Museum of Art*, (2010), http://www.umma.umich.edu/about-umma/index.html.

[98] "Mission," *Yale University Art Gallery*, (2015), http://artgallery.yale.edu/about-mission.

[99] "Overview and Highlights," *Yale University Art Gallery*, (2015), http://artgallery.yale.edu/overview-and-highlights.

ranging in date from ancient times to the present day."[100] Jock Reynolds, the current

Henry J. Heinz II director, "emphasizes the teaching mission of the Gallery through his

words, the initiatives he supports, funding and staffing priorities, and his unmistakably

genuine enthusiasm for the value and pleasure of learning from great original works of

art".[101]

Zimmerli Art Museum at Rutgers University
(http://www.zimmerlimuseum.rutgers.edu)

Mission Statement

> The Zimmerli seeks to educate, inspire, and challenge diverse audiences by
> providing them with the direct experience of art in its many forms. The museum
> supports Rutgers' educational mission by collecting, researching, preserving, and
> displaying works of art, and by making its unique collections and archives
> accessible for study and enjoyment by the Rutgers community and visitors from
> throughout New Jersey and beyond. The Zimmerli aspires to reach all ages
> through its exhibitions, publications, and educational programs.[102]

About and Philosophy

The Zimmerli was founded in 1966 and has a collection of more than 60,000

works of art, "ranging from ancient to contemporary art and featuring particularly rich

holdings in the areas of French art of the nineteenth century, Russian and Soviet

Nonconformist Art, and American and European works on paper, including prints,

drawings, photographs, and rare books".[103] Currently under an interim director, Marti

Mayo, it is considered a "teaching museum with diverse collections and dynamic

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[100] Ibid.

[101] Pamela Franks, "A Twenty-First-Century Teaching Museum: The Expanded Yale University Art Gallery," *Yale University Art Gallery Bulletin (2013): 23*, http://www.jstor.org/stable/23612139.

[102] "About the Museum," *Zimmerli Art Museum*, (2015), http://www.zimmerlimuseum.rutgers.edu/about/about-museum#.VcfASIuvOfQ.

[103] Ibid.

programming which offer something for everyone" from the "university community and

diverse regional, national, and international audiences".[104]

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[104] "Visitors," *Zimmerli Art Museum,* (2015), http://www.zimmerlimuseum.rutgers.edu/information/visitors#.VH9e5jHF-8B.

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Alexander Edward, P. and Mary Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums* (Plymouth: UK AltaMira Press, 2008), 1.

"Art Study Center," *Harvard Art Museums*, (2105), http://www.harvardartmuseums.org/ teaching-and-research/art-study-center.

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