Techno-Culture and Education Design in The Museum

BY

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THESIS

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SUMMARY

This paper contributes to the conversation on museum education by examining how educators can engage learners in a world with digital networks. After World War II, many scholars agreed that the purpose of museums was to provide a service for the public. Now, at the dawn of the twenty first century, digital networks make it possible for another shift, so that museums are no longer *for* the public, but *by* the public. This paper demonstrates how John Dewey's Constructivist Learning Theory and John Falk's Contextual Learning Model can be incorporated into museums' educational programs to enhance learning for an online audience.

The thesis begins with a brief history of the nonprofit public art museum, and then examines how the museum is changing in response to the digital age. Each chapter opens with an examination of a unique digital platform, and then shifts to exploring how the museum can implement the technology into a curriculum. Chapters begin with broad topics, such as a website design, social networks and digital labs, and then progress toward the implementation of specific technologies, such as writing projects, visual media tools, and mobile technologies. Optimism for enhancing public education through online programming permeates the paper, yet each chapter explores the unanticipated and negative consequences of working with an emerging technology.

CHAPTER 1: INTRODUCTION

In the digital age, people interact in physical, virtual, and augmented realities, often simultaneously.[1] As with most developments, for-profit businesses have been quick to explore the potential of this emerging landscape, but many nonprofit museums are still examining its possibilities. The merging of the virtual and the physical space is quickly changing the learning landscape, and museum educators must also recognize this shift to effectively engage learners. The title of this paper, *Techno-culture and Education Design in the Museum*, signifies that the research will examine the intersection between technology and learning in the museum.[2]

In her book *Designing Culture: The Technological Imagination at Work,* Anne Balsamo, Professor of Digital Media at the University of California, Berkeley, studies the impact of technology on culture, and hence motivates a similar discussion on education.[3] Balsamo uses the term techno-culture to describe the condition of living in a society of instantaneous change. She refers to this condition, prompted by constant innovation on the Internet and among individuals,

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[1] Kathleen Moore, *Pew Internet Project* (Washington DC: Pew Research Center, 2011), accessed January 11, 2011, http://pewinternet.org/~/media//Files/Reports/2011/Video%20sharing%202011.pdfThe 2011. The Pew Internet Project research reveals that 93% of teens age 12-17 go online, as do 94% of young adults ages 18-29, and 74% of adults ages 18 and older. Additionally, 60% of these online users are using a mobile phone to access the Internet. The information shows the prevalence of the world wide web in every day life, and the frequency and comfort with which users interact online. Additionally, Rebecca Lieb has documented that while 55% of Americans own home computers, web use is highest among affluent and educated demographics.

[2] Constance Penley and Andrew Ross, *Technoculture* (Minneapolis: University of Minnesota Press, 1991). Techno-culture is a term that refers to the interactions between technology and culture. The term was introduced in published literature in 1991 by Constance Penley and Andrew Ross in their book, *Techno-culture*. Over the past twenty years, the term has been used by scholars and students seeking to analyze the relationship between technology and other spheres of culture, such as education. UC Davis operates a Technocultural studies department that focuses on transdisciplinary approaches to research in digital arts.

[3] Anne Balsamo, *Designing Culture: The Technological Imagination at Work* (Durham, NC: Duke University Press, 2011).

as the singularity.[4] For museum educators, this singularity creates an opportunity to design

online environments and curriculums that will inspire and deepen learning for members.[5]

The call to integrate technology into education comes at an interesting time for museums

in the United States. In a volatile economy, government funded programs are being cut, and the

relevancy of museums is being questioned: What publics do these museums really serve? (Image

1)[6] How do museum services differ from products freely available on the Internet? In order to

advocate for government funding, museum administrators need to articulate the public services

provided by their institutions. Collecting and preserving artifacts for the public has been the

most well-known argument for the relevance of the museum. Another, perhaps less explored

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[4] Ibid., 47. Balsamo defines the Singularity as "a moment of significant discontinuity with what
has come before it is brought about by the acceleration of technological progress, as defined by
increases in artificial intelligence and the speed of computer networks."
[5] Ibid., 133. Balsamo argues that when individuals and ideas come together on the Internet,
knowledge is generated and consumed almost effortlessly. For educators, therefore, the
challenge becomes not to simply present information, but to provide data within a context and a
design that complements learning goals. The process of finding and consuming information has
changed (due to the singularlity). Balsamo points out that users interact and engage with
technological platforms and networks as a means of learning, and corporations such as Google,
Apple, and Microsoft aiding in how people learn just as much, if not more, than formal
institutions of learning.
[6] Mamie Bittner, *Exhibiting Public Value: Government Funding for Museums in the United
States* (Washington DC: Institute of Museum and Library Services, 2008). Accessed October 23,
2012, www.imls.gov/assets/1/AssetManager/MuseumPublicFinance.pdf. Bittner explains
the multiple funding streams that effect museum revenue, including federal, state, local, and
private sources. Each museum has a unique funding structure that supports operations, and a
small historic museum might be entirely run by donations, while the MET is supported by a
diverse set of private donations and government funding. When an economy is in a recession,
however, museums as a whole usually experience funding cuts because both donors and the
government are able to give less to the arts.
Lucas Kravner, "Obama's 2013 Arts Budget Focuses on Education, Mitigating NEA Cuts,"
Huffington Post, August 31, 2012, accessed October 23, 2012,
www.huffingtonpost.com/2012/08/30/obamas-2013-budget-arts_n_1843866.htmlLucas Kravner
at the Huffington Post notes how the Obama's administration cut funding for the National
Endowment for the Arts and Humanities by 13.3%.

argument, is that museums provide a public space for learning, which can be enhanced with emerging technologies.

This thesis addresses how museum educators can develop comprehensive educational programs by engaging learners on a virtual domain. The first chapter provides a context for technological change by providing a brief history of the museum, and the second chapter examines leading theories in museum education. The following five chapters discuss various topics related to online museum education, including the value of website design, the power of a social network, and the potential to enhance the learning experience with digital tools. Each chapter explores the effect of new technologies on curriculum design. Notably, the examples in this paper are more useful for a popular museum than a research institution or educational museum. The intention, nonetheless, is to inspire educators to develop a comprehensive and personalized plan for incorporating technology into their educational programs.[7]

Forward thinking museums such as Tate Britain, The Museum of Contemporary Art, Los Angeles, (LACMA), and The Museum of Modern Art, New York, (MoMA) have taken steps to establish themselves as prime resources for learning on the Internet. Tate Britain offers a variety of learning opportunities on their website, including an online course on the history of art, a channel with educational audio and video recordings, and a discussion forum for emerging artists

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[7] Scott Tennent, "Follow Us Down the Rabbit Hole of Social Media," Unframed Blog, April 2, 2012, Accessed October 24, 2012, http://lacma.wordpress.com/2012/04/02/follow-us-down-the-rabbit-hole-of-social-media/.Scott Tennent reported on Unframed, LACMA's blog, that "Pinterest will be sharing images from our collection, exhibitions, and campus, as well as historic shots from the archives and more. Our Tumblr is a more casual catch-all for images from the collection (taken by us, or by you), plus videos, links, and other oddities we might come across on the Internet."

(Image 2).[8] LACMA is also quick to embrace emerging technology: the museum connects with

a blog, Facebook, Twittr, and YouTube, and announced on April 2, 2012, that they would begin

using P-interest and Tumblr. MoMA, on the other hand, has created a Digital Member Lounge,

where members are invited to browse online programs and exhibitions, and connect with

different online communities managed by the museum (Image 3).[9] These institutions

demonstrate a commitment to technology, and this thesis will explore the historical context for

this new direction, as well as educational theory for developing effective programs. [10]

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[8] "Channel Tate," Tate Website (An online channel with audio and video recordings on the Tate website last updated 2012). Accessed August 22, 2012, http://www.tate.org.uk/context-comment/audio-video.
[9] "Digital Member Lounge," Last modified 2012, Accessed October 24, 2012, www.moma.org/support/membership/member_site/landing.
[10] As this thesis has progressed, many museums have begun new efforts or expanded their online presence.

CHAPTER 2: MUSEUM HISTORY

In his introduction to the *Historian's Guide to Museum History*, Randolph Stern notes the "blanket of critical silence around museum studies" that characterized the field in the 1990s, as opposed to the "flood of literature on the theory, practice, politics, and history of museums" by 2005. [11] Scholars began researching the history and purpose of museums, and, before long, there were competing theories on the topic. [12] Some scholars, however, argued that the quest for a museum theory was in vain because the work and mission of the institution was too multifarious: museums could be small, large, public, private, historical, artistic, research focused, or entertainment focused. As the museum scholar Stephen Weil put it: "The history of the museum is a pious fraud." [13] Nonetheless, the emerging knowledge, albeit disparate, helps understand how societal changes inform and transform museums. A brief history of the nonprofit public museum is presented here, which demonstrates that in the digital age the museum is transforming from an institution *for* the people, to an institution *by* the people.

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[11] Randolph Stern, "A Historian's Guide to New Museum Studies," *The American Historical Review* 110, no.1 (2005): 69-98. The book presents 34 essays on contemporary issues affecting museums. Other recent work includes Donald Preziosi and Claire Farago, eds., *Grasping the World: The Idea of the Museum* (Surrey, UK: Ashgate Publishers, 2004); Gail Anderson, ed., *Reinventing the Museum: Historical and Contemporary Perspectives on the Paradigm Shift* (California: Walnut Creek, 2004).

[12] Ibid., The majority of museum literature written before 1990 came from museum professionals who expounded on the merits of the institution. The public outside the museum, however, including government officials, scholars, and tax-payers, began to notice a lack of critical scholarship on the museum. In particular, there was a need to document the purpose of museums, and to demonstrate the value of the public institution. Eventually, competing theories encombassed everything from Elaine Gurian's "Museum as Soup Kitchen" to Nina Simon's *Participatory Museum*

[13] Stephen E. Weil, *A Cabinet of Curiosities: Inquirires into Museums and their Prospects*, (Washington, DC: Smithsonian Books, 1995) 3. Weil notes that "the history of the museum is a pious fraud."

It is striking to notice that the majority of changes generated by the Internet's profound impact on contemporary culture took place over the last decade.[14] As the Internet shapes society, transforming the way that humans interact with one another and with information, a ripple effect begins to change the way that institutions, businesses, and other parts of society operate.[15] Museums are no exception. What value does the public place on the museum in the digital age? How does technology change the role of museum educators? The brief history presented here provides a context for understanding how technology is transforming education, and also helps identify the role museums should play as the shift occurs.

Museums, whether they are associated with private collecting or public storehouses, have two overlapping threads extending back to antiquity. The first, the history of private collecting in the West for the edification and aesthetic enjoyment of royals, extends back to the third century BC. Harold Osborne, author of "Museums and their Functions," estimates that private collecting began as a hobby when Hellenistic princes battled and traded for valuable objects.[16] The Hellenistic princes, the collectors of Pergamon and Alexandria, stored treasures in private palaces for their personal enjoyment. These objects were put on display for visitors as a testament to the power and affluence of the royals who procured them. Osborne dates the second thread in museum history to approximately 50 BC, when rulers created gathering places for learned scholars. These spaces, the precursors of the modern museum, held precious objects and

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[14] Martin Hilbert and Priscilia Lopez, "The World's Technological Capacity to Store, Communicate, and Compute information," *Science* 332, no.6025 (2011): 60-65

[15] Stephen E. Weil, "From Being about Something to Being for Somebody: The Ongoing Transformation of the American Museum," *Daedalus* 128, no.3 (1999): 229-258. Adele Z. Silver at the Cleveland Museum of Art observes how museums fit into the evolution, and notes, "museums are inventions of men, not inevitable, eternal, ideal, nor divine. They exist for the things we put in them, and they change as each generation chooses how to see and use those things."

[16] Harold Osborne, "Museums and Their Functions," *Journal of Aesthetic Education* 19, no.2 (1985): 41-51.

texts to inspire learning.[17]   While there is a distinction between the museum as a private

collection and the museum as a place for learning, both of the definitions describe a place where

objects of wonder are presented for enjoyment and contemplation.[18]

Contemporary scholars on the Western museum often associate collecting as a means of

acquiring knowledge with the Renaissance. Accordingly, artists' studios and curiosity cabinets

were a popular subject for painters during the 16th and 17th centuries. The interest in private

collections and studios coincided with Amsterdam's Golden Age, when the small city

established shipping routes to North America, South America, Africa, and Asia, as well as local

European destinations.[19]   For example, Flemish artists Jan Brueghel the Elder and Heronymous

Francken II collaborated on *Archdukes Albert and Isabella Visiting a Collector's Cabinet*, a

painting that portrays the Spanish royals visiting a collection filled with items acquired through

trade and design (Image 4). The cabinet painting contains items gathered from around the globe

and displayed together in a room, which makes it possible for visitors to learn through

comparison and reflection.[20]

Private collections grew popular throughout Europe well into the eighteenth century,

which eventually necessitated their compilation in a single source. The *Encyclopedia* of 1750

emerged as such a collection, whose editors, Denis Diderot and Jean d'Alembert, sought

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[17] Ibid.

[18] Museum history as it pertains to the definition of a private collection and a space for public
learning can be traced outside Europe as well, but they will not be a topic of this study.

[19] Jan Feyen, Water and Urban Development Paradigms: Towards and Integration of
Engineering (Danvers, MA: CRC Press, 2008): 375. Feyen writes "the rise of new industries in
Europe changed the economic position of the Dutch urbanised low lands" ... "into a strong and
safe system which would should be abel to fulfil a central role in the transport of bulk and cargo
among the new industrial centres of Europe and the world."

[20] Harold Osborne, "Museums and Their Functions," 41-51.

contributions from leading scholars in the areas of history, philosophy, and poetry.[21]   Diderot,

editor of the *Encyclopedia* for 24 years, asserted that the work was intended to "change the way

people think" by exposing them to vast areas of knowledge, many radically different form the

views espoused by the Church.[22]   Even though knowledge was compiled and available for the

public, museums flourished during the heyday of the *Encyclopedia* as major sites for the

collecting and preserving of objects.

   While a discussion on the *Encyclopedia* may appear to be straying from the topic of

museums and education, the establishment of a storehouse of knowledge aligns with the mission

and goals of the museum. Moreover, the transformation of the *Encyclopedia* from a physical

publication to a digital version anticipates some of the changes in the museum. Before the

Internet, an encyclopedia was a prominent and valued component of a household that privileged

education. The books provided instant access to knowledge on a wide variety of information

previously only available for the pubic at institutions of learning (such as libraries and

museums). The most popular encyclopedia, the *Encyclopedia Britannica*, was first published in

1768, and continual growth and updates led to another fifteen editions over the next two hundred

years.[23]   On March 15, 2012, Britannica announced that they would no longer print hard copies

of the publication.   Instead of publishing, the company has plans to focus on advancing

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[21] These categories encompassed --- science, mathematics, contemporary affairs, religion, natural history, economics, mechanical arts, philosophy, politics, religion, chemistry, mineralogy, politics, agriculture, etymology, physics, and literature, among others.
[22] Lynn Hunt, R. Po-chia Hsia, Thomas R. Martin, Barbara H. Rosenwein, and Bonnie G. Smith, *The Making of the West: Peoples and Cultures: A Concise History, Volume II: Since 1340* (Boston: Bedford/St. Martin's, 2007), 611.
[23]Larry Magrid, "A Look at Encyclopedia Britannica As It Exits Print," *Forbes*, March 20, 2012, accessed May 2, 2012, <http://www.forbes.com/sites/larrymagid/2012/03/20/a-look-at-online-encyclopedias-as-britannica-exits-print/>.

education with digital programs including e-books for schools and libraries, Smartphone Applications, and online encyclopedia services.[24]

The conviction that society should operate on principles of equality and citizenship rather than monarchy and religious authority inspired the *Encyclopedia* of 1790.[25] These ideals also encouraged government administrators to place cultural objects in a public museum for the enlightenment of the masses rather than in a private collection for the enjoyment of a privileged few.[26] Throughout the Nineteenth century, Western museums were believed to exist for the public benefit, and they were charged with collecting, storing, and preserving objects with historic, cultural, and/or aesthetic importance. Collecting remained the primary function of museums until the end of World War II, when, as museum scholar Kenneth Hudson noted, the institution shifted its focus to engaging visitors with educational programs and learning opportunities.[27]

Gradually, museums began to see how educational opportunities could also be used as a tool for social change. In 1988, Ruth J. Abram founded the Lower East Side Tenement Museum to educate the public about diversity in Manhattan's Lower East Side.[28] Abram organized with the Ford Foundation, the Rockefeller Foundation, and the Trust for Mutual Understanding to strategically introduce the idea museums could combine educational opportunities and public

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[24] Ibid.

[25] Harold Osborne, "Museums and Their Functions," 41-51. According to this argument, the public collections of today are a result of the spread of democratic ideas which followed the French Revolution. Gradually the products of the fine arts came to be thought of as public history rather than private heirlooms.

[26] Stephen E. Weil, "From Being about Something to Being for Somebody: The Ongoing Transformation of the American Museum," 229-258.

[27] Ibid. The new focus coincided with enormous growth in the field: seventy-five percent of museums currently active were opened after 1945.

[28] Robert Janes and Gerald T. Conaty, *Looking Reality in the Eye: Museums and Social Responsibility* (Alberta: University of Calgary Press, 2005): 19-42.

service. Together, the group hosted like-minded institutions at a conference in Bellagio, Italy, to

discuss the implications for organizing "a mission-driven museum." One result of the

conference was the founding of the International Coalition of Historic Site Museums of

Conscience (ICHSMC) in 1999.   The mission of the ICHSMC was identified as "assisting the

public in drawing connections between the history of our sites and their contemporary

implications."[29] The establishment of the ICHSM and the idea that museums were responsible to

the public gained traction in the museum community, and many of the ideas were eventually

embraced by leading institutions.[30]

The Metropolitan Museum of Art and The Guggenheim, arguably two of America's most

influential museums, have stated the importance of providing an international audience with

meaningful educational opportunities, and both of them are implementing technology to achieve

their goals.   In 2008, for example, Thomas P. Campbell succeeded Philippe de Montebello as

the director of the MET, and he differentiated himself by pursuing "visitor engagement: a social

science aimed at trying to reach every patron, from the first-timer to the seasoned scholar."[31]

Then, on October 5, 2012, Campbell announced the beginning of METPublications, "an online

resource that allows users to search more than 600 catalogs, journals and museum bulletins by

title, keyword, publication type, theme or collection." The METPublications platform provides a

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[29] The founding museums include: the District Six Museum (South Africa); Gulag Museum
(Russia); Liberation War Museum (Bangladesh); Lower East Side Tenement Museum (USA);
Maison Des Esclaves (Senegal); National Park Service (USA); Memoria Abierta (Argentina);
Terezin Memorial (Czech Republic); and the Workhouse (United Kingdom) .

[30] Elaine Heumann Gurian, *Civilizing the Museum* (New York: Routledge, 2006). Gurian is an
advocate for the museum as a civic-minded institution, and her essays in this novel reflect the
change in thinking about the role of the institution. Notably, she writes *The Museum as a
Socially Responsible Institution*, 1988, *The Opportunity of Social Service in the Museum*, 1991,
and *Free at Last: A Case for the Elimination of Admission Charges in Museums*, 2005. When

[31] Randy Kennedy, The Met's Plans for Virtual Expansion, *The New York Times*, Published
February 11, 2011. Accessed October 21, 2012,
http://www.nytimes.com/2011/02/12/arts/design/12campbell.html?pagewanted=all.

free copy of every catalog that the museum as published since 1964, and reinforces Campbell's

commitment to using technology to educate a wide audience.[32] Likewise, when Richard

Armstrong assumed the role of President of the Guggenheim Museum in 2010, he declared that

the institution's mission was to maintain "the 200 year-old quest to have the most powerful

cultural artifacts available to the greatest number of people … the project of democratizing

beauty."[33] Armstrong's commitment to technology is evident in the Guggenheim's recent Map

Global Art Initiative, a project that will use digital tools to promote exchange among

international artists and audiences. [34] On October 24, 2012, the Guggenheim launched the digital

component of the project, an online platform dedicating to "sparking a cross-cultural discussion

on art from various regions around the world."[35] Implementing innovative technology into

programming and networking practices enables museums like the Guggenheim and the MET to

engage a wide audience with a variety of meaningful learning opportunities.

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[32]Carol Vogel, "Met's Exhibition Catalogs Revived for a Digital Life," *New York Times*, October 11, 2012. Accessed October 22, 2012, <http://www.nytimes.com/2012/10/12/arts/design/the-mets-exhibition-catalogs-are-revived-for-a-digital-life.html.> The publications were previously available for browsing by individuals at the museum, or for purchase by individuals able to order a copy. Now, individuals with Internet access will be able to use the collection to gain information about the collection, without cost.

[33]Claudia Bodin, "Richard Armstrong on the Future of the Solomon R. Guggenheim Foundation," *Guggenheim*, March 10, 2009. Accessed March 6, 2012, <http://www.guggenheim.org/guggenheim-foundation/news/2655>. Armstrong believes in the principle of public utility--dispersing resources in order to derive the greatest public benefit from them--, which guides his policy in the public museums as well.

[34]Robin Cembalest, "A Kinder, Gentler Globlism?" *ARTNews*, November 1, 2008. Accessed October 22, 2012, http://www.artnews.com/2008/11/01/a-kinder-gentler-globalism/. Claudia Cembalest, executive editor ARTnews, documents Armstrong's work at the Guggenheim, and notes how he engages "an increasingly diverse international audience through a unique network of museums and cultural partnerships."

[35]"New Platform Provides Context for Global Art Initiative," Guggenheim Website, October 24, 2012, Accessed October 24, 2012, http://www.guggenheim.org/new-york/press-room/news/4922-new-online-platform-provides-context-for-global-art-initiative-

How is the digital age reshaping the functions of museums? There is still a demand for museums to provide public services and programs for the community. What is new, however, is that the public is now able to assist the staff with the interpretation of the collection. The convergence of online communities makes interpretation a task for a larger community, extending to scholars and researchers around the globe. The public is no longer simply served by the museum, but now has the opportunity to contribute to the museum by voicing their opinion through social media outlets.[36] The role of museum educators and curators in the digital age is still evolving. Emerging technologies create the possibility for museum administrators to act more like stewards than curators, focused on facilitating online conversations and running digital programs.[37] The emphasis on facilitation and programming makes the role of the museum administrator more akin to a creative generalist than a professor.

Richard Sclove's research on technology and democracy analyzes the negative consequences of technology on community, and his ideas provide a touchstone for museum administers seeking to identify the outcomes of technological programs. In particular, Sclove uses the "The Cybernetic Wal-Mart Effect" to demonstrate how the global marketplace negatively impacts local businesses, and thereby communities, by creating an unparalleled

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[36] Carol Vogel, "The Spirit of Sharing," New York Times, March 16, 2011, Accessed October 24, 2012, http://www.nytimes.com/2011/03/17/arts/design/museums-pursue-engagement-with-social-media.html?pagewanted=all. Shelly Berstein, Director of Digital Media at the Brooklyn Museum, supported this argument in a recent interview with the New York Times. Bernstein stated that, " "In the end, we want people to feel ownership of this museum. We ask them to tell us what they think. They can give us a bad review; when we make a mistake they can come to our rescue. We want to engage with our community."

[37] Stephen E. Weil, "From Being about Something to Being for Somebody," 229-258. The new focus coincided with enormous growth in the field: seventy-five percent of museums currently active were opened after 1945. Leslie Bradford has noted the change of the museum staff in the Digital Age, and she suggests that museums begin hiring "creative generalists" to work as "digital facilitators."

shopping experience.[38] For the price conscious consumer, they have the opportunity to buy the lowest priced goods available in the global market, and for the luxury consumer, they are competing with brands that are capable of providing a customized online experience. The Cybernetic Wal-Mart analogy is useful for museum educators for a number of reasons. Foremost, museums considering using online platforms to enhance learning should consider the market that they are entering, and how their services will challenge or complement the ambitious digital programs of mega-museums. Additionally, museums as a whole will need to consider how bringing their programs to an online audience will affect the physical value of the institution. If the publications and the artwork are available online, it may be more difficult to justify the high expense of operating the physical building. The problem is exacerbated by considering that the online programs might prevent audiences from actually visiting the museum, and thereby reduce income generated by ticket sales, gift shop purchases, and other income accrued from museum visitors.

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[38] Richard E Sclove, "Cypersobriety: How a Commercially Driven Internet Threatens the Foundations of Democratic Self-Governance and What To Do About It," in Community Practice in the Networked Society: Local Action/Global Interaction, ed. Peter Day et al. (London and New York: Psychology Press, 2004): 40.

CHAPTER 3: MUSEUM EDUCATION THEORY

The shift from focusing on the museum collection to providing meaningful educational opportunities coincided with a surge in the popularity of the institution. Shedding itself of the historical image of a majestic marble castle on a hill, the democratic museum was opening its doors to a general and increasingly diverse public. Museology scholar John Falk provided metrics for understanding the growing popularity of the museum. He noted:

> "30 years ago, only about 1 in 10 Americans went to museums with any regularity. By 10 to 15 years ago that number had increased to nearly 1 in 4. Today, 2 out of every 5 Americans visit a museum at least once a year. Museum going is currently one of the most popular out-of-home leisure activities in America. Once almost exclusively step reserve of the wealthy and well-educated, museums today serve an increasingly diverse audience."[39]

Now, the task for scholars was to understand the increasingly diverse audience inside the walls.

The American Association of Museums aided museum professionals in their effort to understand visitors by funding a widely read study, "Demographic Transformation and the Future of Museums," that forecasted the future of American society, as well as that of museum-goers, as a "majority minority, in which disparate groups and minorities constitute the collective majority of the population."[40] Traditionally, the museum audience had been overwhelmingly white (90%), and presumed to have a basic education and a moderate level of wealth (Image 5).[41] The museum had already identified serving the public as an important part of the mission, but as

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[39] John H Falk, "Museums as Instituion for Pesonal Learning," *Daedalus* 128, no.3 (1999) 259-275.

[40] Betty Farrell, "Demographican Transformation and the Future of Museums," The Center for the Future of Museums (Washington DC: American Association of Museums Press, 2010). Accessed October 23, 2012, www.policyarchive.org/handle/10207/bitstreams/95941.pdf

[41] Betty Farrell, "Demographican Transformation." The study examined reasons for ethnic variances in attendance, and noted the following as possible explanations 1.) cultural barriers historically made museums feel threatening 2.) lack of art education leading to lack of underestanding 3.) cultural of visiting museums not present in family 4.) immediate community (friends, family) prefer other social activities to museums.

museum audiences expanded and diversified, it was becoming increasingly difficult to identify the audience it intended to serve. Without understanding the audience, it became particularly challenging for museum educators to understand how to develop programs that would benefit truly visitors.

John Falk's Contextual Learning Model and John Dewey's Constructivism eventually emerged as leading and complementary theories on museum learning.[42] Falk's Contextual Learning Model related learning to motivation and expectation, and Dewey's Constructivist Theory postulated that people learn when they contextualize information against their unique background.[43] Understood together, these theories helped museum educators understand *how* and *why* people learn in a museum, without relying on increasingly unreliable socio-economic predictors used in the past. By exploring Dewey's *how* and Falk's *why* of museum visitors, educators can personalize educational programs to provide meaningful learning opportunities for an increasingly diverse audience.

In 2012, nearly ten years later, Dewey's Constructivism and Falk's Contextual Learning Model need to be examined against Balsamo's singularity: How does instantaneous access to information and resources on the Internet change how people learn in and through a museum?

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[42] Melinda M. Mayer, "A Postmodern Puzzle: Rewriting the Place of the Visitor in Art Museum Education," *Art Education* 26, no.4 (2005): 356-368. Mayer discusses how in the late 1990s museum educators began contemplating how a visitor's unique background would influence their ability to construct meaning in the museum. Museum educators became acutely aware of the problems associated with interpreting an object created by one group for the consumption and understanding of another. As a result, educators placed a new and profound focus on the visitor experience. Also see: Melina M. Mayer, "Bridging the Theory-Practice Divide in Contemporary Art Museum Education," *Art Education* 58, no.2 (2005) 13-17.

[43] John H. Falk and Lynn D. Dierking, *Learning from Museums: Visitor Experiences and the Making of Meaning* (Ann Arbor: Altamira Press, 2000). Falk noted, for instance, that while some visitors used the museum to explore a particular topic, such as Impressionism, others might visit merely to entertain family and friends, and so learning will inevitably vary between the two parties.

Why would the public choose to learn with a museum as opposed to gathering information on the Internet?

John Dewey's Constructivist Theory of Learning advanced a complex model of learning that considered each student a unique entity at the center of a complex learning model.[44] The Constructivist Theory proposed that students learned according to their unique characteristics, such as their social background, living environment, habits, and innate intelligence.[45] For Dewey, learning is a constructed activity that takes place on a mental platform inside the mind. Learners receive information and data as they engage with the world, and then they make sense of the stimuli inside their mind, using their background, current knowledge, and imagination to provide a context for processing the information. Dewey notes that the mind tries to contextualize foreign information until "various fragmentary and seemingly incompatible data find their proper place."[46] The role of the educator is to find the information that stimulates learning and encourages reflection for a given individual. Additionally, Dewey points out that without proper instruction, "social influences exist that tend to form habits of thought leading to inadequate and erroneous beliefs."[47] Dewey's Constructivist Theory provided museum educators with a foundation for designing programs based for a diverse audience with unique learning needs.

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[44] As a philosophy of learning, constructivism can be traced to the eighteenth century and the work of the philosopher Giambattista Vico, who maintained that humans can understand only what they have themselves constructed. Dewey, however, developed the model and gave it the popularity and recognition that it receives today.

[45] Osmo Kivinen and Pekka Ristela, "From Constructivism to a Pragmatist Conception of Learning," *Oxford Review of Education* 29, no.3 (2003): 363-375.

[46] John Dewey, *How We Think* (New York: DC Heath & Co, 1910): 79.

[47] Ibid., 58. Dewey notes that the instructor will need to cater to two types of learners: the first belongs to the natural school, and identifies with theories of "freedom, self expression, individuality, spontaneity, play, interest, natural unfolding, and so on." The other type of learner, the logical, "relies heavily upon subject-matter… and method," believing in "discipline, instruction, restraint, voluntary on conscious effort, the necessity of tasks and so on."

At the turn of the twenty-first century, Dewey's theory was complemented by John Falk's research on motivation. Falk researched why visitors choose to learn in a museum, and he believed the museums needed to understand their visitors' motivations in order to provide a valuable service.[48] Falk identified five primary motivations for visiting a museum, which in turn defined five visitor profiles: the explorer, the experience seeker, the facilitator, the professionalist, and the recharger.[49] The explorer goes to the museum to engage with the information that stimulates the mind and the imagination; the experience seeker attends with a tourist mindset and seeks the highlights; the facilitator visits the museum to assist another person in fulfilling a need; the professionalist to indulge a strong interest in the institution; and the re-charger to contemplate the wonder of knowledge.[50]

Dewey's Constructivism and Falk's Contextual Learning Model create a systematic method for museum educators seeking to maximize the impact of their digital programs. By exploring Dewey's *how* and Falk's *why* of visitor engagement, museums educators can personalize educational programs that cater to unique learning styles and motivational profiles. A lofty challenge for educators, but the digital age, ripe with emerging technology, software, and programs, offers a number of possibilities for rising to the occasion.[51]

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[48] John H Falk, *Identity and the Museum Visitor Experience* (California: Left Coast Press, 2009).
[49] Ibid.
[50] These categories invite a degree of change when applied to online programs, but they remain useful for developing a personality profile of the people interacting with a museum's online content.
[51] Clay Shirky, *Cognitive Surplus: Creativity and Generosity in a Connected Age* (New York: Penguin Press, 2010), 197. Shirky describes the challenge as finding a way to marry structure and freedom to create something altogether new.

CHAPTER 4: WEBSITE DESIGN AND TRANSPARENCY

Historically, museums have been considered a place of distinction for holding and interpreting the cultural relics of mankind. The architecture of the building often reflected the prestige of the institution, and, as a result, the museum became associated with the image of a marble palace on a hill. This may be changing with the advancement of the Internet. Matt Morgan, General Manager of the Web Group at The Metropolitan Museum of Art, confirmed that in 2011 (July 2010 through July 2011) approximately 5.24 million people visited the physical site of the museum, while about 48 million people visited the museum's website. Namely, nearly 43 million more people visited the MET's website than those who visited the actual museum. Today, with many museums receiving more visitors on the website than in the physical building, the online presence of the institution is at least as important as the building itself. The growing importance of a museum's digital presence demands a new analogy for examining the relationship of the museum to the public. In particular, the museum as a marble castle on a hill needs to be replaced by something like a glass castle in a global city. The new imagery helps convey the importance of using the museum homepage as a symbol for the reliability and transparency of the institution in the digital age.[52]

Website design plays an important role in establishing an institution as a reliable source for learning in a particular field. Just as a building conveys an important message to the public in the physical world, a website speaks to visitors in the virtual realm. A well-designed site demonstrates to the online community that the institution is forward thinking, concerned with a

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[52] See recent arguments: Maxwell Anderson, "Through the Looking Glass: Museums and Internet-Based Transparency," (lecture presented at the Hirshhorn Museum and Sculpture Garden , Washington, DC, March 11, 2009). Accessed January 15, 2012, http://museumstudies.si.edu/webcast_031109.html.
Rachel C. Graft, "Museums and Transparency," *Art 21 Blog*, October 28, 2008. Accessed January 15, 2012, http://blog.art21.org/2008/10/17/museums-and-transparency.

synchronized image, and capable of funding a well-designed site (which conveys the financial viability of the organization). Besides a quality design and user-friendly navigation tool, the website must offer a transparent look at the organization, be consistently updated, provide detailed and relevant information, and invite user participation and feedback.[53]

Transparency of the website is increasingly important in the digital age, when Web 2.0 technologies allow the public to openly express their opinion on a variety of online sites. Anyone with Internet access is able to post his or her opinion on Wikipedia, Facebook, Tumblr, P-Interest, and/or a corresponding blog. Providing a space for the public to be heard is an important feature of the web, but it is often hard to vet sources and reach the opinions of the most informed and critical experts. Museums can preempt this potential difficulty by openly citing and displaying the credentials of their staff, which will help visitors understand why the organization is a reliable source.

The Guggenheim provides an excellent example of demonstrating leadership through transparency on their website. On the homepage, an *About* tab directs visitors to a directory of staff biographies that are divided by museum department (Image 6).[54] The directory is subdivided into curators, conservators, educators, and executive cabinet, which are linked to a short biography about each individual.[55] The page for an educator, for example, lists their title, previous employment, and where they received their training and education. Apart from proving

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[53] The design of the website and the tools provided should fit with the image of the museum, and be part of a solid mission. This prescription is best suited for a popularist museum, and others will need to identify the best image for their work and purpose.
[54] "Staff Profiles," Guggenheim, 2012. Accessed May 12, 2012, <http://www.guggenheim.org/new-york/about/staff-profiles>.
[55] Ibid.

the museum's credentials as a reliable source, this information allows the visitors to know whom to hold accountable when they visit an exhibition.[56]

The Museum of Contemporary Art, Chicago demonstrated a commitment to transparency when they hosted *Mark Bradford* in Summer 2011 and coordinated a residency to complement the show.[57] MCA staff wanted to make the residency planning transparent for the public, and hence organized a group of staff members under the name *Team Mark Bradford* (known as TMBD), that would be committed to using digital tools (Image 7). TMBD was comprised of members from five museum departments, including education, marketing, communication, curatorial, and digital media, who created a blog that provided weekly updates including video footage of meetings, essays by TMBD, images of the project coming together, and posts from students and other community members. TMBD made the *Mark Bradford* project not only a learning tool but also a participatory process, by exposing the process of designing an art exhibition to the public and accepting suggestions in return.

Critics may claim that transparency policies slow museum operations by forcing management to spend time interacting with the public. If the public is knowledge about the decision-making process of an institution, the argument goes, they will want to offer their opinions for consideration. If the staff regularly interacts with the public through email, instant messaging, or other web devices, the museum will need to implement a mechanism for handling questions, suggestions, and other requests. A curator, for instance, cannot hold an exhibition for each person that requests to see a showcase of their favorite artist, or answer every question submitted by a probing graduate student. What could happen, however, is that each of the

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[56] See recent arguments: Anderson, "Through the Looking Glass: Museums and Internet-Based Transparency;" Graft, "Museums and Transparency."
[57] Mark Bradford, an overview of the artist's work, was organized by Christopher Bedford at the Wexner Center for the Arts in Ohio.

requests could be chosen at random and discussed weekly. The idea of making the staff

approachable is not to burden them with the public opinion, but to provide the community with a

means of being heard, and to keep the public interest at the forefront of the museum mission.

Transparency places a great deal of power into the hands of the public, but also

relinquishes some privacy from the acting institution. In his book *Discipline and Punish,* Michel

Foucault examined how transparency policies and surveillance systems optimize work

performance while simultaneously depriving workers from their right to privacy, by making

them believe that they are being perpetually observed.[58] The Janus face of transparency both as

an enabler of public participation and a tool of surveillance has prompted different scholarly

opinions. Contemporary scholar Byung-Chul Han explores modern transparency policies, and

insists that "The Internet as a space of freedom turns out to be a digital panopticon."[59]

Conversely, author and scholar David Brin explores the relationship between transparency,

accountability and productivity, and points out that information produced by a publically funded

program should be made available to the taxpayers. If the staff has a privacy issue, and do not

want to be personally connected with their work, they could operate under a pseudo-name, but be

associated with an identity for the purposes of accountability.[60] Emerging transparency policies

also call for institutions to consider what type of information needs to be made public. Public

officials and government employees may not be expected to declare what they ate for breakfast,

but they should be held accountable to explain why they funded or cut a program. In summary,

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[58] Michel Foucault, *Discipline and Punish* (New York: Random House Digital, 1977): 142.
Foucault describes that the aim is to "maximize the advantages and neutralize the inconveniences
(theft, interruptions of work, disturbances).
[59] Byung-Chul Han, *Transparenzgesellschaft* (Berlin: Matthes & Seitz Berlin, 2012).
[60] David Brin, *The Transparent Society: Will Technology Force Us To Choose Between Privacy
and Freedom?* (New York: First Trade Paper, 1999).

federally funded institutions should create policies that delineate the divide between public and private information for employees that are responsible to the public.

Making the museum decisions and management process transparent is intended to keep administrators accountable to the public. Unfortunately, transparency policies may have the reverse effect, and allow administrators to craft a screen presence of the institution that differs from the reality of the institution. [61] Slavoj Žižek, for example, claims that "modernist technology is "transparent" in the sense of retaining the illusion of the insight into 'how the machine works.'" He observes that individuals are ignorant to the inter-workings of the machine, and that the ignorance is replicated when users seek transparency through digital screens (since individuals behind screens may be presenting a false image or reality). Žižek makes a valid point – why would an institution relay the shortcomings or pitfalls of their operation? Perhaps some institutions would relate an accurate image based on a commitment to social responsibility, yet it is naïve to think that all museums would portray operations honestly. This problem, however, extends beyond museums, and encompasses individuals crafting a virtual identify and businesses crating a virtual brand. The problem is far-reaching, and, for the time being, possibly unavoidable. Recognizing the issue, however, individuals should seek to understand the truth of a museum (or other institution) from more sources than the ones published or monitored by the organization, and the government might consider enacting policy that validates the accuracy of information provided on publicly funded websites.

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[61] Žižek, Slavoj, "Cyberspace, or the Virtual of the Real," www.jcfar.org/past_papers/Cyberspace%20and%20the%20Virtuality%20of%20the%20Real%20-%20Slavoj%20Zizek.pdf. The problem for Slavoj is more detailed than explored in this argument – he goes on to discuss how "this illusion of the continuity with our everyday environs is that the user becomes 'accustomed to opaque technology.'"

CHAPTER 5: SOCIAL NETWORKING WITH THE MUSEUM

Researchers studying constructivist-learning styles encountered difficulties with the method when implemented in a classroom setting. A constructivist lesson was developed to teach Brown and Compione's instructional model *Fostering a Community of Learners*, and the teacher reported,

> None of the 35 student teachers reached a level at which they could handle *Fostering a Community of Learners* in all its complexity. It is safe to say that almost none of the teachers created the kind of learning community envisioned by the pedagogy. Moreover, project facilitators felt compelled to simplify the model gradually from year to year. The model requires both enormous savvy and craft in the fields of both curriculum and classroom engagement skills that seem to eclipse the resources of beginning teachers.[62]

This teacher's observation demonstrates the time, commitment and complexity involved in creating a project that relies on a constructivist-learning environment.[63] Online communities offer a solution to this problem, however, by allowing constructivist learning to take place on a social network. In a social learning network, the role of the instructor is de-centralized, and each individual moves through the network at an individual pace, acquiring information and constructing knowledge according to their needs.

On a network, with profiles and information readily available, users can work together to help one another. This indeed is already happening on learning websites around the globe: Google any sort of question, from medicine to mechanics, and you will find a number of users have already provided answers. What's more, fan-sites promote group learning in stages. Photography sites like Tumblr and Flickr are filled with photographers that share various levels of skill (Images 8 and 9). Blogging platforms and visual galleries like Pinterest allow novice

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[62] Mark Windschitl, "Framing Constructivism in Practice as the Negotiation of Dilemmas: An Analysis of the Conceptual, Pedagogical, Cultural, and Political Challenges Facing Teachers," *Review of Educational Research* 72, no.2 (2002):131-175.

[63] Ibid. Teachers also required to know where each student is in the development process, and they are required to make conjectures about how students learn.

photographers to post questions to more advanced users, such as the type of camera or lens that they recommend, and users often receive comments back from the community (Images 10 and 11). The popularity of online learning networks has prompted David Brin to name contemporary times as The Age of the Novice.[64] As learners improve, they simply transfer to the next skill level. Similarly, a museum learning network could create forums and databases for members to engage in this kind of self-directed learning. The museum may not be responsible for creating a curriculum, but for encouraging members to actively participate on the network.

Bringing technology into museum education presupposes that there will be an influx of information into programming. The digital age is nearly synonymous with the information age, a period when muses, reporters, scholars, and opinionated individuals from around the globe are able to publish their opinions online. The problem for the public, then, is not finding information, but being able to find the most relevant and useful information for a given topic. Gregg Gorgon, President & CEO of the Social Science Research Network, succinctly states the problem: "Readers of scholarly research are faced with an overabundance of information due to interdisciplinary subject areas, access to research at earlier and multiple stages, and simply more research from more scholars…. There aren't enough hours in the day to read everything…we need better tools to know what research we need to read. We don't know what we don't know."[65]

Database search engines, with peer-reviewed articles, can be programmed to help users navigate a site, but when a search engine like Gorgon's uploads nearly 300,000 papers from

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[64] David Brin, *The Transparent Society*. Brin distinguishes between the contemporary period, The Age of the Novice, and the past, when students committed to a single discipline and studied under teachers in that field to advance their skills.
[65] Gregg Gordon, "What We Don't Know We Don't Know," *Against the Grain 22, no.4 (2010): 1-4.*

140,000 authors in a single year, the problem of relevancy persists.[66] The Getty Research

Institute held a workshop titled, "Art History and The Digital World," on June 8-9, 2006, where

Max Marmor, Director of Collection Development for ARTstor, acknowledged the abundance of

images available on the Internet, and the pressing need for databases with "features we most

value in libraries – features designed to support teaching, learning, and research."[67]

Furthermore, Marmor stated that implementing these features would require an almost historic

emphasis on personal relationships that foster learning through collaboration, communication,

and debate. A museum's social network could indeed allow a space for this kind of traditional

learning relationships.

A museum's social network can also encourage users to learn through active

participation. Within the network, there is no single teacher relaying a set of principles or body

of knowledge to an identified audience. Instead, there are multiple individuals offering to share

their knowledge and expertise with other members of the network. The learners are no longer an

elect group of individuals identified as good candidates for the program based on intelligence,

affluence, or another trait.[68] Ideally, there are minor barriers to entry, such as computer access,

availability, knowledge of the technology, and ability to interact. The social learning network

does not serve as a substitute for the valuable knowledge of a learned teacher, but it offers a

learning opportunity for people without the time, skill, or money to study under a master. The

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[66] Ibid.

[67] Martha Baca and William, "Art History and the Digital World," *Art Journal* 65, no.4 (2006): 51-55.

[68] While there are benefits to having programs that except only qualified applicants, these restrictions make it difficult, if not impossible, for everyone to receive an education. This thesis proposes that museums use social networks and learning platforms to provide learning opportunities for a wide audience – not an elite one. Alternatively, however, different types of memberships or networks could also be created that allow elite groups to co-exist. These network and programing decisions will be decided by the museum administrators to meet the specific goals of the institution.

model may not be ideal, but it does provide a solution for educating a large number of interested individuals and providing a free education.

Perhaps the most important feature of the online social network is its ability to inspire communities based on affinity rather than geography.[69] Online networking sites connect people in a virtual zone, and thereby enable communication among geographically dispersed individuals. Affinity-based social networks provide an optimal space for channeling the singularity because they allow information to flow through a network comprised of individuals with prior knowledge of a topic, and thereby inspire informed reflection, conversation, and debate.[70] These affinity-based networks are a defining aspect of participatory culture, which Henry Jenkins, Professor of Communication, Journalism, Cinematic Arts and Education at USC, defines as "a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices."[71] Jenkins and similar scholars researching affinity-spaces note that formal institutions of learning, such as schools and universities, have been slow to embrace the learning potential of affinity spaces. The lack of response from the educational community creates an opportunity for informal

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[69] Historically groups were based on affinity such as religion, ethnicity, or a profession, and were largely based on geographical proximity. In many cases, of course, individuals would travel to congregate, but these were arranged meetings that were not able to occur spontaneously. Affinity spaces disregard differences in age, class, race, gender, and educational level, and focus instead on interest and skill.

[70] While the knowledge of each individual is determined by the standards and regulations of the network, it is assumed here that anyone joining a topic-based network would do so with some prior knowledge or interest in the subject.

[71] Henry Jenkins, "Confronting the Challenges of Participatory Culture: Media Education for the 21st Century." The John D. and Catherine T. MacArthur Foundation. Accessed October 23, 2012. http://digitallearning.macfound.org/atf/cf/%7B7E45C7E0-A3E0-4B89-AC9C-E807E1B0AE4E%7D/JENKINS_WHITE_PAPER.PDF

institutions of learning, such as museums and libraries. These nonprofit public entities, created for the public benefit, are able to promote learning in affinity-spaces by creating opportunities online community involvement.

The importance of social networking platforms for institutions of learning can be best understood by examining the structure of a network. Historically, networking within a field was like an elevator structure in which multiple floors of a building symbolize the different departments or fields of knowledge. In this elevator-structured network, people predominately work with individuals on their respective floor (i.e. their field), and if someone wishes to gain information or knowledge outside their department, they must use the elevator. An online network, however, works more like an atom, where the nucleus is a database on the web. The rings radiating around the database relate to the various individuals with an interest in field (or the database). While the rings (individuals) around the online database are distinct, they intersect at various points as they orbit the nucleus (database), and the arrangement ensures that the rings intersect at various points (allowing individuals to communicate). A social networking platform would increase learning in the museum by connecting a vast network of individuals for collaboration and communication. The membership webpage would be the portal to the network, a place for members to access museum resources, communicate with one another, and learn through conversation and debate.

The majority of museum memberships currently place individuals into the category of family, adult, or senior. Problematically, these simplistic categories fail to consider the motivations and interests of individual members. Using Falk's five personality profiles, a progressive museum might consider using multiple and more layered categories to attract an audience. Imagine, for instance, that visitors are prompted to take an identification questionnaire

when they land on the museum homepage. The questionnaire determines the motivational

profile of the visitor, and then the website creates a custom homepage based on the user's

designation as an explorer, experience seeker, facilitator, professionalist, or recharger.[72] This

would ensure that museums are using their knowledge about visitor motivation to provide the

public with the most relevant information and services possible.

Each member profile would provide information about the individual that would assist

them in interacting with others, such as their interests, education, and learning goals. All the

members would be placed in a membership directory, and users would be able to search the

directory to easily contact other members. In this way, all the members in the community would

begin to work as a resource for one another. If a relational artist is seeking information about

city regulations for a community art project, for instance, she might search the directory for

members who are active in local government. Likewise, if a graduate art student is seeking

information about contemporary art practices, she might reach out to members listed as "working

artist" to inquire about their methods and projects.

The key to designing a beneficial network would rest on the demographic information

and search parameters available to members. The site administrator must implement useful

categories for members to fill out when they make their profile such as years of experience, areas

of expertise, medium used, or artistic practice. This information will distinguish each profile,

and help members obtain useful information about other users on the site. The network creates a

learning resource that makes the members the main attraction of the website – instead of

searching the world-wide- web for emails and contact information, all the members are provided

with a profile and an email account so that they are able to engage with one another.

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[72] A page for learners would provide information and videos on exhibits, the page for the
facilitators would provide information about plays for children, and so forth.

Since users self-identify their member type, the educational resources available on the site can be tailored to accommodate the needs of the individuals. Students can be provided with information about art courses, development programs, and opportunities for mentoring. Young and mature adults, however, might want more information about investing in art, such as auction results and gallery openings, or information about local policy for arts programming. These are simply options, however, and the needs and wants of the online community will largely depend on the type of institution and the members that it attracts. The educator curating the site should be actively involved with the members, polling and participating in forum discussions, to develop and provide the resources that will most efficiently meet the needs of the members of the various membership categories. To summarize, the social networking site helps create a constructivist-learning environment tailored to the motivation of individual users. Additionally, providing a network for learning, using the atom approach rather than the elevator method, places the member at the center of a personalized learning environment.

One of the most justified criticisms against social networking sites is their violation of user privacy. A user profile in the museum nonetheless would allow members to control how much information they share with the institution and thereby provide users with a privacy option. Modern website analytical tools make it incredibly simple to track information about website visitors from their IP address. Widgets like getClicky can be installed on any website for a nominal fee, and they allow novice website owners to track where visitors are physically located, what content they are viewing on the website, and how long they stay on a page. Furthermore, technologically savvy companies, such as Google, Amazon, Nordstrom, and Netflix, connect IP addresses with website behavior to track everything from interests to friends. Many of these companies do not require users to create a member profile in order to track their information on

their website.[73] The benefit of the user profile in the museum, therefore, is that it allows members to remain anonymous, and it also allows the profile to use extracted information correctly. A problem with taking information anonymously, such as through an IP address, is that the server cannot always ascertain exactly what the information is being used for. If a user gets a number of emails regarding university tuition or books, the site might classify them as a student although they are actually a teacher on the listserv. A member profile, by contrast, would allow the user to identify themselves by career, education, interests, and then ensure that they are getting the information that they desire.

Poplar education is a noble pursuit, yet it creates new challenges for a constructed learning environment. Choosing an elect group of scholars, or monitoring entry into a program, ensures that selected participants interact within a milieu of minds capable of informed discussion and debate. Individuals within these elite programs recognize the chosen members as their peers, and the rigorous selection process helps establish trust among the members of the group. When a program is available for the masses, leaders have more difficulty identifying one another, and time is compromised by novices eliciting their opinion. For this reason, individuals with advanced knowledge in the field may not opt to join the network, and then active users only gain exposure to less reputable work. This is a difficult challenge to overcome. Still, quality learning is possible if users are exposed to reputable research (such as the freely available METPublications), and encouraged to engage in thought-provoking conversation around the material. Having respected members of the community working on the site would be ideal for the group, but it does not mean that the program would be unsuccessful without their presence.

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[73] As previously mentioned, many companies track information on the website according to a user's IP address. Some companies, such as Google, track user information in email, but that does require a user to set up an account. For further information, the privacy policy of each company should be studied.

Ideally, learning on the social network is organic: members join and engage on the site as long as it is useful for them, and when they obtain skill and knowledge greater than their peers, they are able to seek learning opportunities elsewhere.

CHAPTER 6: MUSEUMS AND DIGITAL MEDIA LABS

The digital environment allows instructors to engage and instruct students in a virtual zone, and thereby makes it necessary for educators to prepare students to interact ethically and responsibly in that space.[74] Students need to be equipped to respond critically to digital content, and encouraged to curate rather than passively consume material. Digital labs offer the public a space to enhance their technological skills, collaborate with other individuals, and learn how to use digital content wisely.

The intersection between the humanities and technology make manifest the possibilities for increasing creativity and learning with digital labs.[75] The recent success of Artlab at the Hirrshorn Museum and YOUmedia at the Harold Washington Library shed light on programming possibilities for museum educators to increasing learning opportunities. Artlab sponsors year-round classes that teach teens how to design everything from videogames to podcasts, and the lab uses the museum collection or current exhibition as the theme of the projects. Each Artlab course is designed to create a digital product or service that will enhance the visitor experience inside the museum. Though not organized by a museum, YOUmedia, a self-defined "21st Century learning space for high school students," similarly connects local teens with instructors to cultivate learning skills and creativity in a digital age, and helps teens

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[74] Laura Pappano, "Got the Next Great Idea?" *New York Times*, July 19, 2012. Accessed August 12, 2013, http://www.nytimes.com/2012/07/20/education/edlife/campus-incubators-are-on-the-rise-as-colleges-encourage-student-start-ups.html.

[75] Stanley Fish, "The Digital Humanities and the Transcending of Mortality," *The New York Times*, January 9, 2012. Accessed May 15, 2012, <http://opinionator.blogs.nytimes.com/2012/01/09/the-digital-humanities-and-the-transcending-of-mortality/>. In his blog, Fish points out Jerome McGann's, the University of Virginia, challenge to this field: "The general field of humanities education and scholarship will not take up the use of digital technology in any significant way until one can clearly demonstrate that these tools have important contributions to make to the exploration and explanation of aesthetic works."

design multi-media works from websites to videos.[76] Problematically, Artlab and YOUmedia serve teens exclusively, and do not offer a similar opportunity for adults and children. Preparing for the future, the museums may consider designing a digital lab that offers resources for a diverse audience of learners.

The digital lab offers the public an excellent space for collaboratively designing global art projects. These projects would involve members with an interest in global issues and collaborative artwork to use virtual platforms for creating artwork for the online community. A guiding question would inspire each project, and would use art to examine larger issues. The French photographer JR used the Internet as a medium for exploring the issue of conflict and identity with *Inside-Out-Project*. His collaborative project called participants from around the globe to take black-and-white photographs of themselves in their community, and then upload them on his website, insideoutproject.net (Images 12 and 13). Uploaded images remain on the site as learning tools, and are intended to prompt questions about identity, culture, and environment. For the second component of the project, JR created massive photo-collages by merging the uploaded images. JR then mailed the photo-collages to communities around the world to be displayed on buildings, rooftops, and billboards. The importance of JR's work for museums is twofold: his project provides an example of how museum educators can use the Internet to enable group learning, and it shows the social value of collaborative projects.[77]

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[76] Douglas Thomas and John Seely Brown*, A New Culture of Learning: Cultivating the Imagination for a World of Constant Change* (New York: Create Space, 2011). The establishment of YOUmedia is the result of research conducted by the MacArthur foundation that describes how creativity is cultivated by digital communities that allow teens to "hang out", "mess around", and "geek out."

[77] Ann Balsamo is currently working on similar projects participatory global art projects. During June 27-July 27, 2012, she exhibited Quilt 2012 in Washington DC. Quilt 2012 was made of 48,000 individual panels, and is considered the largest living memorial. She also incorporated what she is calling "digital experiences" into the work to allow Internet users to interact with the

Digital labs provide an ideal space for educating the public about how to properly use and create material online. As users navigate the web, they transition between the role of user, consuming information, and the role of creator, responding and altering information. Understanding the rights of creators and users can be complicated since digital content is identified by an HTML that lacks many of the analogue properties of the object (text, image, video). A poet, for instance, might upload copyrighted work to their website, and then have their material copy and pasted onto another user's personal blog (perhaps without properly citing the material). This worst-case scenario for using and appropriating work can continue on – another viewer might place the poem over a favorite image, another might recite it in a UTube video. Educators can use media labs as a space for educating the public about the roles and responsibilities associated with being both a user and a creator of online content.[78] Topics that users should be aware of include, but are not limited to, finding and evaluating sources, properly citing sources, abiding by copyright laws, and understanding authorship.[79] Digital literacy is not always covered in public school programs, and adequate knowledge is not required for users to participate in online social networks and platforms. There is a pressing need for Internet users to be digitally literate, and the lack of educators providing the public with this service makes the digital a prime location for learning these skills.

Website developers are working on solutions to protect the copyrights of artist on shared platforms, and museum educators can assist their efforts by educating the public about tools for

work by searching for names, browsing panels up close, and connecting the quilt to the documented history of AIDS.

[78] Balsamo, *Designing Culture*, 142.

[79] The Digital Literacy Project, Cornell Information Technologies, last modified 2009. Accessed August 15, 2012, digitalliteracy.cornell.edu/tutorial/dpl3000.html. The Digital Literacy Department at Cornell University is currently researching the topic, and has compiled a comprehensive list of information that users need to be informed of, as well as methods teachers can use for teaching workshops.

responsibly sharing information on the Internet. Google image search, for instance, provides a useful tool for finding the original source of an image on the Internet. The image search operates on the same principles as a text search, but it requires users to upload a picture. Once the picture is uploaded, Google scans it against all the other images in their database, and returns sites that have the image on them. Google does not rank shared sites like P-interest and Tumblr very highly for searches, and so the results list is likely to contain the original image.   Aside from understanding the laws and properly citing works, the public should also be encouraged to use Creative Commons, sites where users upload information that they *want* to be freely distributed. Digital platforms provide a useful resource for sharing ideas and enhancing learning opportunities, and proper tools and education can ensure that the tool is beneficial for both users and creators.

Museums exist outside the formal boundaries of the elementary education and university system, and so museum educators are able to implement constructivist-learning opportunities without challenging state and federal education policies. The opportunity to experiment with new learning styles and domains, however, also creates new responsibilities. The digital lab must serve the online community, as well as visitors to the museum, as a place for learning how to properly interact in virtual zones. Students should be taught about the property rights of digital work, and when it is appropriate to consume, alter, or share the content. The digital lab is not intended to replace digital learning courses at formal institutions of learning, but to serve as a public space for learning how to interact with digital media.

CHAPTER 7: THE FUTURE OF WRITING

The Internet is capable of serving as a forum for writers to express their ideas, share their work with others, and learn from their peers. As Internet users navigate across blogs, e-zines, forums, and other writing platforms, they are exposed to multiple writing styles and means of conveying information, and they are able to learn at their own pace. Museum educators can utilize learning opportunities provided by wikis, blogs, and Twitter to create interactive and individualized learning opportunities.

The term wiki, used to describe a collaborative writing process, is eponymous with Wikipedia. Wikipedia, the world's largest encyclopedia, operates solely on the contributions of its users, and despite its short-lived mistakes, it is often more accurate then privately funded reference material.[80] The framework for a wiki entry is created on terms created by the platform provider, the introduction of the topic, and the participants in the dialogue. The process of editing and revising, of discussion, dissent and consent, means that a wiki is open-ended. If the wiki inspires debate, the dialogue will continue to exist as a constantly evolving form and will remain open until the public agrees that the entry is correct.

Museum educators can use wikis as a storehouse for knowledge, as well as a platform for inspiring new information in a field. For example, in Spring 2011, Associate Curator Tricia Van Eck organized *Without You I'm Nothing: Art and Its Audience* at the Museum of Contemporary Art, Chicago. Include illustrations. *Interactions: A Four Month Series of Artist and Audience Activations* was a companion piece to the exhibition that explored the evolving relationship

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[80] Cathy Davidson and David Theo Goldberg, *The Future of Thinking: Learning Institutions in a Digital Age* (Cambridge: MIT Press, 2010): 13. Davidson comments that, "Recent studies have shown Wikipedia to be in general no less reliable—and sometimes considerably more reliable—than most credentialed traditional encyclopedias such as Britannica."

between museums, artwork and audiences.[81] *Interactions* explored the shifting relations

between the three entities by bringing artists into the gallery to make connections between the

institution, the art, and the public. The artists in the show incorporated the audience into their

artwork and, by doing so, constructed opportunities for the artist and the audience to engage with

one another. *Interactions* raised numerous questions about how to properly document relational

art and how to describe the evolution of art.[82] If a wiki entry had existed for *Interactions*, it

would have allowed visitors and staff to engage in a conversation about flux, possibility, and

transformation.[83] Each entry would begin with a title, such as "art in flux," and then invite

museum administrators, artists, and users to engage in a conversation that creates knowledge on

the topic.

Placing a wiki on a digital site allows a large and diverse network to participate in the

creation of the work. Humanities, Arts, Science, and Technology Advanced Collaboratory

(HASTAC), founded in 2002 by Cathy N. Davidson (Duke University) and David Theo

Goldberg (Director, UCHRI), provides an example of how a wiki generates knowledge by

connecting users from distinctly different backgrounds, institutions, and disciplines.[84] When

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[81] "Without You I'm Nothing: Art and Its Audience," (exhibition presented at the Museum of Contemporary Art, Chicago, November 10, 2010 – May 1, 2011). Access April 1, 2011, http://mcachicago.org/exhibitions/past/2008/260.

[82] "Interactions: A Four Month Series of Artist and Audience Activations," (exhibition at the Museum of Contemporary Art, Chicago, January 4, 2011- May 1, 2011). Accessed April 1, 2011, <http://mcachicago.org/exhibitions/past/2008/269>. Questions arose such as how to measure the intangible benefits of relational art.

[83] Ibid.

[84] "About," HASTAC, Updated July 10, 2012. Accessed October 23, 2012, http://hastac.org/ The HASTAC platform works on a volunteer basis, allowing individuals from around the globe to create an account and participate on the website. . On May 16, 2012, a thread titled "The Future of Museums" was posted onto a community forum. The thread was intended to answer questions such as: How are museums changing in the digital age? What are the most innovative projects in museums today? How does a museum see itself interacting with its visitors in the space vs. online? Even beyond technology, how are museums changing their practices and

individuals interact with others who share a different set of beliefs or knowledge, basic

assumptions are questioned, knowledge is shared, and collaboration is possible. To enable a

similar learning environment, museum educators may cultivate a diverse membership, and

encourage participation on the website.

The wiki project or the idea of open-writing is of course not without its problems.

Wikipedia has a disclaimer warning all users of the possibility of erroneous content on the site.[85]

Most notably, the site has received widespread criticism for operating on the contributions of

volunteers rather than the research of scholars.[86] A scholarly journal has peer reviews to ensure

the accuracy of reported information, and newspapers and magazines must report accurately to

maintain a credible reputation. Wikipedia, however, operates as an anonymous database that

anyone can contribute to, and the public welfare is often the only incentive that contributors have

to report accurate information. Even if an expert reports on a given topic, the database allows

anyone to make changes, and so the information can quickly shift from credulous to credible and

back again. If someone is creating a post on the site for personal gain, such as marketing a given

destination or product, the public may not be able to discern the truth without further research.

There is also the possibility that users would use the platform to deface individuals or

institutions, and thereby provide unreliable and/or biased information. The public should be

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missions? What does it mean to 'curate' in the age of pinterest, Tumblr, and blogging? The
thread demonstrates the enthusiasm for research on how educators can engage museum visitors
with social media, learning networks, and other digital platforms.

[85] "General Disclaimer," Wikipedia, Updated January 16, 2012. Accessed August 20, 2012,
<http://simple.wikipedia.org/wiki/Wikipedia:General_disclaimer>.

[86] "Wikipedia: A Work in Progress," *BloombergBusinessweek*, December 13, 2005. Accessed
August 15, 2012, www.businessweek.com/stories/2005-12-13/wikipedia-a-work-in-progress.
Well publicized incidents of Wikipedia abuse include USA Today Editor John Seingenthaler Sr.
being connected to the assassinations of President John F. Kennedy and Senator Robert F.
Kennedy. A writer anonymously published the Wikipedia entry as a biography about
Seingenthaler.

made aware of the potential for inaccuracy or personal gain when using a wiki, and the museum network should provide a disclaimer informing users of the potential for abuse.[87] This however can only be a provisional solution, and museums need to keep thinking about ways to prevent abuse through wiki sites, rather than being evasive about a major problem simply by including a disclaimer.

Functioning as an Encyclopedia published by the public and for the public, wikis run the risk of espousing the opinion of the majority. The database is intended to enlighten the public by publishing the shared knowledge of the community. Unfortunately, however, espousing the opinion of the majority drowns at the voice of the potentially more informed minority. Timothy Messer-Kruse, author of *The Trial of the Haymarket Anarchists: Terrorism and Justice in the Gilded Age* and *The Haymarket Conspiracy: Transatlantic Anarchist Networks* discovered that he was unable to publish new information about the Haymarket Affair on Wikipedia because he did not have credible sources, a problem Wikipedia refers to as "undue weight" or a "tiny-minority view."[88] Messner-Kruse took issue with the undue weight policy, and criticized Wikipedia for not allowing "a 'minority' source with facts on its side," to "appear against a wrong 'majority' one."[89] The problems posed by wikis need to be understood and anticipated by museum administrators, and institutions using wikis for participatory projects should consider how rules governing the platform will manipulate the information presented.

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[87] Many solutions to these problems are currently being addressed: the Open Researcher and Contributor ID project (ORCID) is developing tools to identify scholarly authors; The Hypothesis is working on a similar tool for managing reputations in a given field; PressForward seeks to identify the best written work in a field.

[88] "Reliable Sources and Undo Weight," Wikipedia, Updated June 25, 2012. Accessed August 20, 2012. < http://en.wikipedia.org/wiki/Wikipedia:Reliable>.

[89] Timothy Messer-Kruse, "The 'Undue Weight' of Truth on Wikipedia," *The Chronicle of Higher Education*, February 12, 2012. Accessed August 20, 2012. <http://chronicle.com/article/The-Undue-Weight-of-Truth-on/130704/>.

A virtual platform creates an opportunity for individuals to collaborate on written

projects. The Institute for the Future of the Book, founded at the University of Southern

California in 2004, envisioned the potential of an online platform that allowed readers to respond

to books, altering and commenting as they were inspired, angered, or intrigued.[90] The result was

an organization called Comment Press that allows users to upload written documents, and then

turn them into dialogues for an online community. Once the document is uploaded, readers

integrate their own comments and revisions until, purportedly, a digital voice replaces the

authorial.[91] The process seeks to transform the traditional authoritative novel into a discussion,

where ideas remain based on acceptance, and contentious issues are altered until a consensus

develops Digital writing platforms like CommentPress evolved so that individuals could

participate in online writing projects. Aside from letting users edit and respond to a written

project, the platform also allows writers to reference, hyperlink, and bookmark written work.

These are useful features for students learning about content, authorship, or working together on

an evolving idea or storyline. There are, however, a number of problems that will be

encountered as users transition from working with analogue writing tools to working with digital

writing tools. Most notably, the voice of the individual author is lost along with the

organizational structure of the traditional novel. Without an author to report a narrative,

argument, or proceeding, the reader may feel disoriented, or wonder where the point or message

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[90] "About Us," The Institute for the Future of the Book, Updated 2004. Accessed May 17, 2012, http://www.futureofthebook.org/mission.html. The mission statement of the organization states "The printed page is giving way to the networked screen. The Institute for the Future of the Book seeks to chronicle this shift, and impact its development in a positive direction. The Institute is a project of the Annenberg Center for Communication at the University of Southern California, and is based in Brooklyn, New York."
[91] "Welcome," Commentpress, Updated 2012. Accessed May 18, 2012. http://www.futureofthebook.org/commentpress/.

of the work rests.[92] Organizations interested in using a social writing platform need to address a number of concerns regarding the tool, such as comment rights, the benefits and drawbacks of allowing members to work anonymously, identifying user-types (writer, monitor, editor), and version archives (tracking the revisions, comments and modifications by date and user). [93] A social text should not be equated to a traditional book, but recognized as a means of inserting a text within a network so that users may participate in the evolution of a written project.

Blogs provide museums with a powerful tool for increasing writing skills with digital tools on a learning network.[94] Part of the appeal of the blog is that, as author Kathleen Fitzpatrick points out, it exists based on relevancy, and makes information available immediately.[95] Once thought to be a writing outlet for the novice, blogs are now recognized among the most revered authors. On January 9, 2012, New York Times writer Stanley Fish even described,

> "This is a blog. There, I've said it. I have been resisting saying it — I have always referred to this space as a "column" — not only because "blog" is an ugly word (as are clog, smog and slog), but because blogs are provisional, ephemeral, interactive, communal, available to challenge, interruption and interpolation, and not meant to last."[96]

Blogs allows museums to provide their members with a space for sharing written work with their network, and, by extension, a global audience. Many independent bloggers have

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[92] Kathleen Fitzpatrick, *CommentPress: New (Social) Structures for New (Networked) Texts* 10, (2007). Accessed October 23, 2012, http://dx.doi.org/10.3998/3336451.0010.305.
[90] Ibid.
[94] Susan Brooks-Young, *Teaching With the Tools Kids Really Use: Learning with Web and Mobile Technologies* (Thousand Oaks: Corwin Press, 2010): 2. Blogs are growing in popularity throughout the literary world: Technorati.com, an Internet research site, reported that over 133 million blogs existed as of 2009.
[95] Kathleen Fitzpatrick, *Planned Obsolescence: Publishing, Technology, and the Future of the Academy*, (New York: NYU Press, 2011).
[96] "The Digital Humanities and the Transcending of Mortality," *The New York Times*, January 9, 2012. Accessed May 17, 2012, http://opinionator.blogs.nytimes.com/2012/01/09/the-digital-humanities-and-the-transcending-of-mortality/

trouble finding an audience amidst the plethora of blogs on the Internet. If a museum educator

creates a space for bloggers to work, however, each of the users will be connected to others with

a relevant interest. Members might blog about anything from their reaction to art to their own

artistic process. Whatever topic they choose encourages them to learn about the subject, and,

consequently, enhances their communication, writing, and digital literacy skills.

Blogs on a museum network might serve a dual purpose by serving as a resource for

people interested in learning about art. The museum could highlight or feature one or two

prominent blogs, and allow the online community to learn from the opinions of the author.

Before or after attending the museum, the public would be able to read blogs on the network to

enhance their knowledge of the exhibition, collection, or other related topic

Blogs provide an excellent tool for writers to publish their opinions and develop their

writing skills. They do pose a problem, however, when the public is not educated to distinguish

the opinion of a scholar from the opinion of a novice. Users must be able to evaluate the

accuracy of information, the weight of sources, or the bias of the writer for Internet resources to

provide an effective means of learning. The MacArthur Foundation is working to solve this

issue, however, and currently developing methods for making online material more transparent

for users. The foundation has researched the feasibility of instituting digital badges as indicators

of "accomplishment, skill, quality or interest that can be earned in any of these learning

environments."[97] Badges would help users identify the quality of information provided by a

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[97] The Digital Media and Learning Competition, MacArthur Foundation and the Bill and Melinda Gates Foundation to the University of California, HASTAC Initiative, 2007-2011. Accessed August 14, 2012, http://dmlcompetition.net/Competition/4/about.php. A digital badge is an online record of achievements, the work required, and information about the organization, individual or other entity that issued the badge. Badges make the accomplishments and experiences of individuals, in online and offline spaces, visible to anyone and everyone, including potential employers, teachers, and peer communities.

blogger on a website. A novice blogger, for instance, would have a badge titled "learner," while a Ph.D. might have a badge that reads just that "Ph.D. Art History." Implementing emerging technology in a curriculum invites problems as the public learns to use the medium, and museum educators should discuss measures to maximize the utility of the tool.

Twitter is another online writing tool that museum educators can utilize to enhance learning on the Internet. Twitter works as a blog of sorts, but it mandates that users keep their posts to a 140-word minimum. With this restriction, users are required to keep the information as concise and relevant as possible, and the data feeding into Twitter reads more like a headline than an article. The Twitter format upends the traditional writing process of gathering information, reflecting on the content, composing thoughts, and editing a final draft. Twitter uses a social network so that each user links their profile to other accounts that they want to follow.   Unlike a wiki, each member of the Twitter community has an account attached to their user name, and so members know exactly whom they are corresponding with.[98]

Since Twitter allows real-time conversation between identified individuals, the platform offers an ideal space for creating a constructivist-learning environment. On the Twitter site, users must be immersed in the topic and conversation in order to participate on the site and interact with other users.   There are a variety of ways museum educators can use the Twitter platform to enhance learning for members. To start working with Twitter, the museum website could create a Twitter account that follows leading artists, curators, and museum administrators. Each day, a team of twitter guides might read through the tweets and prepare blogs based on the

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[98] This is intended to be the case, but there have been reports of impersonation, especially regarding celebrities and businesses, that prevent users from always knowing exactly who they are dealing with. Twitter is working on measures to prevent fraud, however, such as using verified account services to confirm the identity of users.

general ideas and conversations taking place in the museum world.[99]

Twitter works especially well for problem solving activities that ask users to brainstorm and work through solutions. If a museum educator posts a question like "what should the next exhibition be?" they allow the community to voice their opinion and discuss possible answers. This works well as a learning tool for all the participants because it prompts each member to respond, and therefore reflect on the question, but it also exposes them to the thoughts and opinions of their peers. The challenge for educators using Twitter will be to keep the audience engaged in the work of the museum so that they feel compelled to participate in hosted conversations.

Many museums and art enthusiasts are already using Twitter, and to find them, a user simply needs to browse the museum category listed on the website. Tate Collectives, a self proclaimed "digital and online space run in conjunction with Tate Gallery for young creative," uses the Twitter platform to make announcements regarding events at the museum, link followers to relevant artists and websites, and field questions from the user community.[100] Tate demonstrates how museums can use Twitter to communicate with the public, and other museums institutions might use the site as a model for creating their own platform.

Twitter gained a considerable amount of attention in the art world with support from the Chinese digital activist Ai WeiWei. On March 15, 2010, the artist met with Jack Dorsey, co-

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[99] A convenient way of working with Twitter would be to set up an RSS feed that responds to the Twitter account. An RSS feed is helpful when the information on the Internet appears too plentiful to translate into useable knowledge. To set up an RSS feed, an education designer simply sets up an account with an aggregator, such as Delicious.com, that bookmarks useful sites for the participants. The RSS can contain pertinent blogs, twitter feeds, newspapers, journals, etc, and provide people with one place to get all of their information. After the educator sets up an RSS feed and adds all the sites that might be useful to a research project, the group only has to check the RSS feed to have access to pertinent information from all the different sources.
[100] "Tate Collectives," Twitter, Updated 2012. Accessed August 22, 2012. https://twitter.com/TateCollectives

founder and chairman of Twitter, and Richard MacManus, founder of ReadWriteWeb, to discuss how online platforms can inspire social and political change.[101] During the discussion, WeiWei discussed the firewall around the online social and publishing platforms in China, and likened Dorsey to a God for allowing people to freely express themselves on Twitter.[102] On February 24, 2011 WeiWei tweeted "I didn't care about jasmine at first, but people who are scared by jasmine sent out information about how harmful jasmine is often, which makes me realize that jasmine is what scares them the most. What a jasmine!"[103] The famous tweet was associated with the online protests inspiring dissidence throughout the Middle East, and caused speculation that WeiWei desired a similar movement in China. Subsequently, the artist was arrested at Beijing Airport on April 13, 2011, while attempting to board a plane to Hong Kong. The details of his arrest were not revealed to the public until 12 days later, and Twitter was used during the interim to publish updates regarding his mysterious disappearance.[104] The Chinese government sited economic crimes as the reason for WeiWei's detainment, but his reputation as a digital activist, using online platforms to publish information about injustices in modern China, is believed to be the real reason behind his arrest.

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[101] Frederic Lardinois, "Digital Activism in China: A Discussion Between Ai WeiWei, Jack Dorsey and Richard MacManus," ReadWriteWeb, March 15, 2010. Accessed August 15, 2010, http://www.readwriteweb.com/archives/weiwei_event_roundup.php.

[102] "Websites Blocked By the Great Firewall Of China," *Great Fire*, March 25, 2011. Accessed August 15, 2012. https://en.greatfire.org/blocked-websites YouTube, Facebook and Twitter, as well as TV channels like CNN, are currently blocked in China.

[103] Peter Foster, "Ai Wei Wei: growing force behind Jasmine Revolution very strong" *Telegraph*, March 15, 2011. Accessed August 5, 2012, http://www.telegraph.co.uk/news/worldnews/asia/china/8366009/Ai-Wei-Wei-growing-force-behind-Jasmine-Revolution-very-strong.html.

[104] "Free Ai WeiWei," (*Free Ai WeiWei* was a blog that captured news and events related to the disappearance of Wei Wei). Accessed June 8, 2012, http://freeaiweiwei.org/ Following WeiWei's arrest, a number of mysterious events took place, including the searching of his home and studio, the disappearance of his accountant and his assistance, the detainment of his wife, and the questioning of his friends and family.

The WeiWei incident illustrates how conflicts might arise from implementing Twitter as a learning tool. Museum educations need to be aware of the risks associated with the platform before committing to using the site. Among other things, administrators need to be aware of impersonators misrepresenting businesses and individuals, and also of the permanency of tweets. When an individual tweets, that information becomes the property of the Twitter platform, and even if they delete it from their personal account, it remains forever on the site. Museum administrators should be aware of potential problems associate with the platform, and educate about the public the policies informing the site.

To ensure that users are motivated to participate in writing projects, the site should be set up with a variety of prompts that appeal to different types of users. There are two ways of doing this that appear simple and effective. First, if a member self-identifies themselves as an explorer, experience seeker, facilitators, professionalist, or recharger on their member profile, then their homepage can be tailored to show them wikis, blogs, writing platforms, and Twitter prompts that appeal to their interests. As mentioned, a professionalist would be exposed to conversations and writing about the technical details and theory of their practice, while a facilitator, using the site for a child or other family member, might be shown prompts for simple stories about art for children, or art jokes on a Twitter site. A second option for catering to motivational profiles on the site would be to ensure that each webpage, for the wiki, the blog, the writing platform, and Twitter, all incorporate the five motivational styles as learning options. When visiting the museum blog page, for instance, the user would be shown five different blogs, related to the motivational profiles, and able to choose which one they would like to read. Alternatively, both methods could be implemented simultaneously, with members seeing the customized site when they are logged in to their profile, and seeing the general site, with many options, when they are

not identified by motivational type. Museum administrators will need to study the Internet activity of their users and understand which options work best with their learning material and goals.

The Internet has enormous potential to enhance learning by connecting individuals to communicate ideas and collaborate on writing projects. Digital writing platforms like blogs, wikis, and Twitter are changing the learning landscape, and museum educators can use these tools on websites to engage audiences. Since the public is having conversations together, sharing and relating information, the museum no longer needs to be the only source validating and providing facts and knowledge. Now, education designers at the museum may create projects that channel the knowledge being created on the Internet into projects for learning.

CHAPTER 8: VISUAL MEDIA

Visual media on the Internet is simultaneously personal and public: it occupies a private space on a user's computer, and it also lives in a public space on the web. Because visual media operates within these two realms, it provides a medium for the public to share knowledge and experiences around objects.[105] Web 2.0 is filled with digital media files such as videos and images that users are able to exchange across networks, platforms, and databases. Museum educators have the potential to use these tools to create constructive learning environments tailored to motivational profile types.

Online videos provide an excellent means of merging technology and instruction because they allow the public to access instructional content at their convenience. Before online videos, individuals seeking to watch a specific performance needed to be in the vicinity of the instructor. Today, educators can record instructional content and place it on the web so that it is made available to a wider and geographically disperse audience. For museum educators, videos can be used on the website to provide the public with access to experts presenting information on a variety of topics.

In a constructive learning environment, the job of the educator rests in curating a selection of videos that will enhance learning by meeting the motivational needs of learners. Educators might consider organizing the video library based on motivation: a section for explorers, experience seekers, facilitators, professionalists, and rechargers. The video selection

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[105] Ronald J. Tocci, *Digital Systems: Principles and Applications* (New York: Prentice Hall, 2006). Digital media is a data technology that allows information to be stored in discrete or non-continuous values. The non-continuous values, as opposed to continuous or analog, allow information and files to be exchanged across different types of media and technology. These data files are produced in professional studios and on personal computers, and the public is exposed to multiple varieties each time they use the Internet.

will vary by learner motivation: learners motivated by experience, for instance, might be anxious

to see a video of Jeff Koons's latest installation causing a stir in New York City, while

facilitators would likely be more interested in watching an introduction to art history with their

child. Within the categories of motivation, the videos should also meet constructivist-learning

goals by allowing the learners to deepen their learning in the subject area.

The popular Technology Entertainment Design (TED) videos use the expert- lecture

format. [106] Available free on the web, the TED format disseminates videos of experts speaking

on a topic for no more than twenty-minutes. By providing the public with access to experts,

these videos fuels what TED founder Chris Anderson calls "crowd sourced innovation." Crowd

sourced innovation refers to the progressive thinking that occurs when individuals collaborate to

push innovation forward. The premise of crowd-sourced innovation is that a networked society

allows individuals to share unique information, through which new knowledge and ideas emerge.

Consider, for example, how a TED video by Sir Ken Robinson generated new knowledge by

harnessing the collective intelligence of a digital audience. Robinson's talk, archived as "Ken

Robinson says schools kill creativity," was received over 10, 589, 300 views and 2,456

comments on the TED website. [107] Robinson argued that traditional schools educate students to

become "good workers, rather than creative thinkers." [108] As a response to his argument, the

TED community started numerous conversations (and they are still being generated) about how

schools can design curriculums that inspire original thinking. Each conversation inspired a

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[106] "About Us" TED Website, Updated April 2007. Accessed May 21, 2012,
http://www.ted.com/pages/about. TED was founded in 1984 in Monterey, California. The
organization declares that their mission is to "make the best talks and performances available to
the world, for free."
[107] Ken Robinson, "Ken Robinson on how schools kill creativity,"TED Website, Filmed
February 2006. Accessed May 21, 2013,
http://www.ted.com/talks/ken_robinson_says_schools_kill_creativity.html
[108] Ibid.

constructivist learning environment for thinkers as they discussed the merits and pitfalls of

Robinson's argument: some respondents thought of ways to make schools more creative, many

community members argued against Robinson, and still others provided additional information

to support his claims. TED's ability to generate knowledge highlights the value of the expert

lecture format, and museum educators can use the structure to enhance their own curriculum. To

use the expert video format, museum educators must find the most capable person to present a

lecture on a given topic, and encourage the online community to engage in dialogue related to

the presentation.[109]

Interview and demonstration videos also work well as learning tools. As their names

suggest, the interview format helps audiences to get to know the interviewee better, and the

demonstration videos serve to show *why* or *how* something happens. The demonstration video

allows an audience to learn by observing how inputs or actions correspond to certain outcomes

or effects. A demonstration video allows a remote expert to provide instructional knowledge

about a process to a geographically disperse audience. For instance, music students seeking to

emulate and study under Yo-Yo Ma, in the past, would seek the master at a prestigious university

or musical academy. Today, the Internet brings Yo-Yo Ma into the homes of every musical

student interested in learning from him through a video. The public, whatever it is they are

seeking to learn, might now choose to be instructed by a great master via distance-learning than

find a local, less seasoned coach to inform them. For an art museum, a demonstration video

might consist of an artist working in their studio and explaining the methods behind their

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[109] The popularity of the lecture-style video is causing some museums to question the value of having lecture in their museum. Why would an audience want to come hear someone speak when they could have the same experience at home, comfy on their couch, from an online video? While some pros to the in-house lecture remain, such as having the speaker present, and allowing for questions, museum educators must consider what hosting a lecture in the institution provides that an online video does not.

creation. The Tate, for example, has an online collection of demonstrational videos that show

artists creating a work of art in their studio. [110] Demonstration videos would also be useful for

showing how people interact within the gallery, observing relationships, and documenting other

types of non-scripted performance. Once the video is created, the potential for it to generate

conversation and feedback will provide an additional opportunity for learning.

Educators have long recognized the potential for media to serve as an instructional tool for

visual learners. The connectivity of the Internet multiplies this potential by allowing users to

connect ideas, thoughts, and narratives to digital media. [111] Museum educators can inspire

learning with visual media by building online galleries to facilitate conversation and debate

around visual objects.[112] The recent success of Pinterest, an online visual gallery and social

networking site, presages the potential for community learning with visual galleries.[113] The

website can best be explained with the analogy of a library. If the digital media dispersed around

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[110] "Channel Tate," Tate Website (An online channel with audio and video recordings on the Tate website last updated 2012). Accessed August 22, 2012, http://www.tate.org.uk/context-comment/audio-video.

[111] Andy Rindos, *The Transformation of State Education Through State Education Clouds* (New York: IBM Cloud Academy, 2010). Accessed August 15, 2012, http://www.ibm.com/ibm/files/N734393J24929X18/EBW03002-USEN-00.pdf. The idea that media is meant to be shared by a community is giving rise to digital media libraries that bring together communities and networks for discussion, reflection, and debate. Traditionally, media on the web that was not secured with privacy rights could only be saved if an individual copied the file onto a private computer. The recent advent of clouds, however, has placed new and profound importance on utilizing online galleries for media files.

[112] Caroline M.L. Ho, Mark Evan Nelson, and Wolfgang Mueller-Wittig, "Design and Implementation of a Student Generated Virtual Museum in a Language Curriculum to Enhance Collaborative Multi-modal Meaning-Making," *Computers and Education* 57, no.1 (2011): 1083-1097. Authors built an online image gallery for Seeing Culture, a project that created an online visual gallery with a goal of providing students with a context for building their visual literacy.

[113] Lauren Drell, "Pinterest: Behind the Design of an Addictive Visual Network," *Mashable*, December 16, 2011. Accessed May 22, 2012, http://mashable.com/2011/12/16/pinterest-design/ Lauren. The invite-only social discovery platform launched in March 2010, the brainchild of Paul Sciarra, Evan Sharp and Ben Silbermann, with the mission to "connect everyone in the world through the 'things' they find interesting,". In October, the site surpassed 421 million pageviews, with 3 million users.

the Internet can be likened to the books existing outside of a library, un-catalogued and un-archived, then P-interest is simply the cataloguing and archiving of the digital media on the web. The archives are personal, and each user is invited to create multiple pin-boards so that they can store and easily share their favorite media, including recipes, paintings, and/or to their account. When they find something of interest related to any of these topics on the web, they can "pin" the item to their board so that they can consistently link back to it.

Museum educators have the ability to harness learning with online galleries that facilitate conversation and reflection on visual culture in a constructivist-learning environment. The educator should consider the motivation of members learning with the platform, and then use the gallery to design projects that would appeal to their interest. For example, if creating a project for professionalists, the leaner might be tasked with creating a gallery of photographs that demonstrate the differences that arise in an individual photographer's work when using different types of film. For a recharger, however, the assignment may simply be to create a gallery of images that they would most like to have in their home. Networked users are able to comment and discuss the images inside of a gallery, and thereby inspire further reflection and learning with the images.

If digital galleries like P-interest are analogous to library archives, visual blogs like Tumblr are like new-release shelves. Tumblr is an online platform that provides users with a blog for uploading digital media and text. Museum educators can run visual blogs like Tumblr to create a constructivist-learning environment for users. An educator might post an image related to an exhibit or collection, and then ask the community to comment on how they connect the photograph to the outside world. Each post would provide a deeper context for the original photograph, and allow the community to engage in a conversation around the image.

Shelly Bernstein, director of technology at the Brooklyn Museum, allowed the online

community to curate Click!, a crowd-sourced photography exhibition. Bernstein titled the show

"Changing Faces of Brooklyn" and then called the public to submit personal or professional

photographs related to the theme. All the submissions were uploaded anonymously onto a

virtual platform, and the online community was invited to rate the photographs based on

creativity. As part of the voting process, users were also required to take part in a survey that

asked them about their artistic background. After the votes were in, the photographs were

installed in order of rank, along with the compiled information about the people involved in the

voting process.   Hypothetically, a curator or educator might create post with the simple question,

"What exhibit would you like to see at the Brooklyn Museum in the summer of 2012?" and

create an exhibition with work that received the most votes. The community curated exhibition

would be reflective of the ideas and politics of the respondents, as opposed to the ideas of the

curator.

Museums can provide an additional learning opportunity in a virtual site by allowing the

online community to tag media files. Tagging, a talksonomy for the digital age, is the process of

archiving media files on a website.[114] When something is posted online, a webpage, a

photograph, a video, or any other type of media, tags provide descriptors for categorization and

retrieval purposes.   For example, the Art Institute of Chicago webpage might be tagged as

museum, modern art, Picasso, Chicago, or any other number of useful search terms. Tags also

serve to unite similar content, so that when a museum tag is searched, it connects the Art

Institute of Chicago to the Metropolitan Museum of Art, NYC, to Tate, Britain.[115] Utilized in an

educational setting, tags might ask learners to label media according to context, history, or

importance. Flickr, a popular photo publishing website, assists users with tagging photographs.

When an image pops up, if the server recognizes the form, it will provide a variety of possible

tags. On a social network, the tags would connect one user's photos to another's, so that both

parties could see how other people are interpreting similar material and ideas. The connections

would enable learning by exposing the users to each other's work, and, hopefully, providing a

new perspective or insight about their own work.

Distributing visual media across digital channels raises questions about the ethics of

sharing created work. Images and videos spread around the web at the click of a hyperlink, and

the work often loses the connection to the original artist or creator.[116] Tumblr proclaims itself to

be a site where users "can follow the world's creators," and P-interest defines itself as a "site for

sharing things you've found -- the concept is about visually circulating ideas."[117] Both platforms

operate by having members upload their favorite works from photographers, designers, chefs,

and other creative professionals, so that they can be shared with their personal network of

followers. Critics of the platform claim that it is difficult to associate visual media with the

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[115]"About Us," FlickR Website, Updated 2012. Accessed May 22, 2012,
http://www.flickr.com/about/ FlickR, a popular photo-publishing website, assists users with
tagging photographs. When an image pops up, if the server recognizes the form, it will provide a
variety of possible tags.

[116] Providing the public with access to images by placing them on the web alters the manner in
which users interact with the material. When the collection is placed online, it is turned into an
HTML code so that it can be displayed and transmitted throughout the web. When an object
becomes a code, many of the properties that distinguished it form other materials dissolve, and it
becomes part of a wider network of online products that can be easily shared, altered, or stored
by an individual user.

[117] "Tumblr Terms of Service," Tumblr Website, Updated July 18, 2012. Accessed August 27,
2012, www.tumblr.com/policy/en/terms_of_service.
"Terms of Service," Pinterest Website, Updated April 6, 2012. Accessed August 27, 2012,
pinterest.com/about/terms/.

original source once it is uploaded onto a personal site.[118] For example, users are expected to provide a citation for any work connected to their page, but the links and citations are often incorrect or missing. Furthermore, the Digital Millennium Copyright Act (DMCA) protects the rights of the user on sharing platforms by insisting that the user does not claim ownership of the work.[119] P-interest and Tumblr state that they protect creators by taking down any image that is reported private, or proclaimed to be protected under copyright.[120] Another criticism of the sharing platform is that it prevents creators from being properly compensated for their work. The debate over whether or not information should be free is larger than the scope of this paper, but it will be noted that the sharing of information does provide free publicity for artists. Hyperlinks and citations that go viral promote an artists' work across the web, and the links have the potential to give an artist international exposure. The creator, therefore, has the potential to gain by selling more work or product based on their newfound fame. The shared platform does create problems for some users, but these issues should be challenges to work around, not reasons for banning use of the platforms.

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[118] Molly McHughh, ""Pinterest in Blowing up – with cries of copyrightinfringement," *Digital Trends,* February 17, 2012. Accessed August 27, 2012, http://www.digitaltrends.com/social-media/pinterest-is-blowing-up-with-cries-of-copyright-infringement/#ixzz24Hi84wRJ.
[119] Kamaila Sanders, "Here's How to Avoid Copyright Problems on Pinterest or Tumblr," *Business Insider*, May 9, 2012. Accessed August 27, 2012, http://articles.businessinsider.com/2012-03-09/tech/31138590_1_dmca-copyright-holder-social-media#ixzz24HUWEWwj.
[120] "Tumblr Terms of Service," Tumblr Website, Updated July 18, 2012. Accessed, August 27, 2012, www.tumblr.com/policy/en/terms_of_service
" Terms of Service," Pinterest Website, Updated April 6, 2012. Accessed August 27, 2012, pinterest.com/about/terms/

CHAPTER 9: MOBILE TECHNOLOGY

Historically, institutions of higher learning were seen as the gatekeepers of knowledge, but Smartphones are now providing users with instant access to virtual libraries and networks. If institutions of learning endeavor to educate the public other than officially enrolled in their classes, they must do more than simply provide facts: they must teach the public how to engage with objects and information in a real-world setting. Harvard Professor Eric Mazur, for example, asserts that if institutions of learning are charged only with relaying information, then "the only thing we would need to do is videotape the best lectures and put them online."[121] Instead, Mazur urges educators to develop material that engages students in interactive learning projects that "connect directly with students' experiences, projects, and goals."[122] Mobile technology can help museum educators understand the motivational profile of visitors, and assist them with creating a constructivist-learning environment for on-site visits.[123]

William Mitchell's writing in the late 1990's foreshadowed how the singularity would transform not only the way that individuals communicate, but also the way that society as a whole operates. In *e-Topia*, he argued that digital networks would have an impact on society as profound as urbanization, resulting in a "wherever, whenever, globally interlinked world."[124]

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[121] Craig Lambert, "Twilight of the Lecture," *Harvard Magazine*, April-May 2012. Accessed August 23, 2012, http://harvardmagazine.com/2012/03/twilight-of-the-lecture.
[122] Ibid.
[123] Nancy Proctor, Director of Technology at the Smithsonian American Museum, leads "The Museums to Go" network in an effort to build mobile browser software with other museum administrators. Proctor classifies mobile technology in museum in four ways: listening devices traditionally used for audio tours, MP3 devices that support downloadable material, mobile phones that require manual activation, and Smartphones that automatically connect to the internet. Mobile technology in this paper will focus on Smartphones, and the ability of the device to instantly connect with the Internet.
[124] William J. Mitchell, *e-topia* (Cambridge: MIT Press, 1999), p. 7. Michell describes the technological realm as an additional layer of reality, and states: "This latest layer will shift the functions and values of existing urban elements, and radically remake their relationships. the

Mitchell noted that the "new agenda separates itself naturally into several distinct levels," and categorized them as telecommunications infrastructure, smart places, software, and spatial configurations. [125] For Mitchell, smart places can be physical as well as virtual, and they are characterized by software that makes them useful. His definition of smart places is helpful when examining the role of the museum in the digital age, and considering how administrators can use mobile technology to create smart places inside the virtual and physical areas of the museum.

Analog museum labels emerged as a means to define objects in the encyclopedic curiosity cabinets that permeated Renaissance Europe. These labels allowed collectors to categorize information about the objects in their collection, and often contained information such as provenance, materials, and origin. Similar labeling tools are now emerging as Smartphone applications, and the program allows users to find information on anything from an unknown item on a dinner menu to the type of tree in a forest. Unlike a curator providing a label that aims to understand what the user wants to know about the object, this tool allows to provide a "best guess," and then the user can go to hyperlinks and searches to acquire additional information. [126]

Multiple search engines can be used inside the museum to gain basic knowledge about an object, and, when used in conjunction with social media tools, the information can be customized

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resulting new urban tissues will be characterized by live/work dwellings, twenty-four hour neighborohods, loose-knit, far-flung configurations of electronically mediated meeting spaces, flexible, decentralized production, marketing and distribution systems, and elecontically summooned and delivered services. This will redefine the intellectual and professional agenda of architects, urban designers, and others who care about the spaces and places in which we spend our daily lives." Mitchell's writing, including e-topia, provided a foundation for scholars researching how technology is transforming society.

[125] Ibid., p. 5.

[126] "Google Goggles," Google Mobile, Updated 2011. Accessed May 21, 2012, http://www.google.com/mobile/goggles/#text. Currently, Google pulls information about objects as though the user had searched for the item with through the search engine. When a painting is scanned, for example, the a small box identifies the work, the author, and the date, and then web results relating to the work are placed below the Google label. This process has the potential to help alleviate the conflict that arises when curators seek to interpret a cultural relic for the public.

to fit the interests of the visitor. Pandora provides an example of how websites use algorithms for customization: the music mogul asks users their favorite song, and then creates a radio station with similar sounds, themes, and artists based on their response. As users listen to new songs, Pandora prompts them to rate how well they like the music, and the music becomes increasingly customized as a result. In this age of mass customization, API's like Hunch are collecting information about individuals from their activity on Google, Facebook, LinkedIn, and other Internet websites, and integrating the data into algorithms that make predictions about consumer behavior.[127] If this technology were integrated into a mobile interface, a user scanning an object or painting would receive customized information. Currently, a Wikipedia label accessed through Google Goggles would describe *Puppy 1992* as, "Jeff Koons was commissioned in 1992 to create a piece for an art exhibition in Bad Arolsen, Germany (Image 14). The result was Puppy, a forty-three feet (12.4 m) tall topiary sculpture of a West Highland White Terrier puppy, executed in a variety of flowers on a steel substructure." API's like Hunch provide the possibility for the description to become more relevant. Imagine someone who works in horticulture visits the museum and uses Hunch to learn about *Puppy 1992* (Image 15). In this case, the label might read, "Jeff Koons's Puppy holds over 25 tons of soil watered by an internal irrigation system. Over 70,000 multi-hued flowering plants grew from this steel and soil structure, including Marigolds, Begonias, Impatiens, Petunias, and Lobelias." Mobile devices allow each visitor to customize the information that they receive so that it aligns with their particular interests.

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[127] "About Us." Hunch Website, Updated 2012. Accessed May 22, 2012, http://hunch.com/info/about/ "Hunch's mission is to build a 'Taste Graph' of the entire web, connecting every person on the web with their affinity for anything, from books to electronic gadgets to fashion or vacation spots. Hunch is at the forefront of combining algorithmic machine learning with user-curated content, with the goal of providing better recommendations for everyone."

A valid and strong critique of recent development in digital identifying tools is that they turn the digital world into an ultimate surveillance society, much more imprisoned and oppressive than how Foucault analyzed the Panoptic prison as a metaphor of modern institutions.[128] If smart technologies are to be integrated to museum education, the educators need to take this immense ongoing challenge, work for ways to minimize its Panoptic consequences and prepare their students for taking actions against their violation of privacy. This handicap is yet another reason to integrate digital technologies into museum education only with cautioned enthusiasm and critical thinking. API search engines work for identifying the motivation of the user since they are able to compile so much information on them from their email, search terms, and other data attached to their computer IP address. Essentially, the computer already knows whether a user is a recharger, an experience seeker, an explorer, a professionalist, or a facilitator. This organization method is helpful for providing users with the information that they want, but it has the potential to capture users in a filter bubble. Described by Eli Pariser in a TED Talk, a filter bubble arises when all the information users receive is tailored to their personal tastes and interest.[129] The dangers of the filter bubble are that parties are not exposed to opposing points of view or information that does not align with their interests. Museum educators should educate the public about how Google and API's work to alter the information that users receive on the Internet.

Relinquishing the power of curator to Google has many benefits, but there are also drawbacks to implementing a technology that is still evolving. A common concern with Google,

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[128] Michel Foucault, *Discipline and Punish*.
[129] Eli Pariser, "Beware online 'filter bubbles'," TED Talks, Filmed May 2011. Accessed August 22, 2012, http://www.ted.com/talks/lang/en/eli_pariser_beware_online_filter_bubbles.html (accessed 8 Aug 2012.

for instance, is that the Internet mogul is able to monitor the information that is displayed when a search is performed. .When a user performs a search, the pages are sorted in the database according to the calculations, and then sent through a classifier that determines whether a person is looking for a product, person, place, or knowledge.[130] After the webpages have been classified, they are given a relevancy score, and the sites with the highest scores are returned to the user on the first search page. The problem with this ranking is that users are receiving the information that Google believes they should have according to the PageRank classifier: not necessarily the most valid or the most researched, and definitely not the most controversial. Another potential problem, as seen with the China Firewall, is that search engine designers have the opportunity to block information that they deem inappropriate for the public. Museum educators need to be aware of these issues, and participate in the unresolved discussion about challenges presented.

The proliferation of virtual environments in the public sphere has led to the distinct spheres of virtual and physical reality. Virtual realities exist inside of a screen, provided by game sets, computers, mobile phones, and other digital devices. Tapping into these virtual realities has become second nature as people use them for entertainment, networking, shopping, learning and just about any other type of human behavior. Physical reality, by distinction, is anything that remains unmediated by technology or a screen. The recent advent of a third reality, coined augmented reality, blurs the distinction between the virtual and the physical by bringing computer-generated graphics into physical space. Augmented reality inhabits the physical environment with the help of a virtual program, and the technology has the ability to affect all of

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[130] Saul Hansel, "Google Keeps Tweeking Its Search Engine," *New York Times*, June 3, 2007. Accessed August 30, 2012, http://www.nytimes.com/2007/06/03/business/yourmoney/03google.html?_r=1&ei=5070&en=4 40365758231671c&ex=1182052800&pagewanted=all.

senses, transforming the way we interact with our surroundings. As the environment evolves, it offers the potential for new ways of learning.

Utilizing augmented reality, the museum can incorporate relevant aspects of the local community into the museum experience. Layar and Junaio, augmented reality platforms for revealing information about objects, allow developers to code everything from buildings to street signs with information or images retrievable with a Smartphone. When users hold an equipped mobile device up to a coded object, the phone reveals additional information or provides images about the scanned item. The additional information appears as a hologram visible through the phone, and is referred to by developers as a layer. As an example, the Andy Warhol Museum layer displays interesting Warhol facts around Pittsburgh and New York City (Image 16). Users download the museum application, and then use it with GPS technology to locate and interact with points of interest in the city related to Andy Warhold (or whatever lesson the application was designed to provide). Other museums might benefit from similar technology: history museums could transform the city to reflect different decades and contemporary art museums could demonstrate how they respond to and are shaped by the community.

Jane McGonial is the scholar best known for promoting alternate reality games as a means of engaging students in immersive learning environments. In 2010, McGonial published the New York Times bestselling book *Reality is Broken: Why Games Make Us Better and How They Can Change the World*. Her argument is that alternate reality games can be used to simulate real life problems that can be solved through collaborative thinking.[131] While the concept is appealing, her argument is not universal, and alternate reality environments do not

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[131]Jane McGonical, 'This Is Not a Game': Immersive Aesthetics and Collective Play (paper presented for the Department of Theater, Dance, and Performance Studies at the University of Berkeley at California, 2003). Accessed August 15, 2012, http://www.seanstewart.org/beast/mcgonigal/notagame/paper.pdf.

motivate learners universally. Alternate reality environments simulate reality for a limited time, and they ask that users complete a number of steps to learn a lesson, experience a sensation, or enter some other controlled environment.   Some research reports that while many learners respond well to the new learning environment, others shy away from interacting in a sphere that divorces users from reality.[132] As with any learning method, alternate reality experiences will engage some, but not all students. It will, however, provide all students with unique exposure and an alternate way of interacting with their surroundings.   Additionally, within the constructed reality, users should retain a sense of autonomy so that they are able to cater their learning experience to their unique goals.

The Center for Information and Research on Civic Learning and Engagement at Tufts University conducts research on civic engagement trends in America. A recent study, *The Internet's Role in Making Engaged Citizens*, showed how technology is changing individual behavior. The study concluded that technological advancement and access to mobile resources provides people with exposure to numerous ideas and conflicts, access to diverse perspectives and opinions on the issues, and a means of participating and stating their own opinion. These trends suggest that individuals use the Internet to learn about their environment, understand the current political environment, and forecast the future. By using mobile scanners to connect exhibitions with the web, the museum allows visitors to learn with a medium they are comfortable with, and to use the museum as a foundation for exploring the larger world. Bringing mobile technologies into the museum is an effective way of creating a personalized

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[132] Elizabeth Bonsignore, Kari Kraus, June Ahn, Amanda Visconti, Ann Fraistat, and Allison Druin, "Alternate Reality Games: Platforms for Collaborative Learning," (Paper presented by the College of Information Studies at the University of Maryland for the Tenth International Conference of the Learning Sciences in Sydney, Australia, July 2nd – 6th, 2012*). Accessed August 22, 2012*, http://ahnjune.com/wp-content/uploads/2012/03/CoopLearningARG_FinalRev.pdf.

experience that allows visitors to construct meaning based on their unique desires, interests, and

learning goals.

CHAPTER 10: CODA: DISCONNECTED IN A GLOBAL NETWORK

If Balsamo's idea of the singularity as an inevitable condition is accepted, then it invites a conversation on how to properly anticipate the repercussions of technology.[133] There is a lot of research being done on how museums can incorporate technology for their mission (see bibliography), and many museums are using those prescriptions to develop educational programs. Problematically, the research on how museums can use technology to engage visitors rarely contains an analysis of the possibly negative consequences. Tim Healy, Professor of Electrical Engineering at Santa Clara University, studies the unanticipated consequences of technology, and observes "Change is always with us -even without the intervention of human beings, nature changes constantly..." and "all change seems to involve unanticipated consequences."[134] It is possible to mitigate negative consequences, however, by endeavoring to understand the possible outcomes. Each section of this paper identified challenges that corresponded to the technology discussed in the chapter (mico-issues), and the paper will conclude with an examination of the repercussions of enthusiastically pursuing a digital environment (macro-issues). The closing arguments will examine research by John Dewey and Slavoj Žižek that identify problems with the disintegration of the real.

The prolific Dewey expounded on the importance of constructivism in education in *How We Think* (1910), and clarified the importance of empiricism in the relationship between child and

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[133] Anne Balsamo, *Designing Culture*, 47. Balsamo defines the Singularity as "a moment of significant discontinuity with what has come before it is brought about by the acceleration of technological progress, as defined by increases in artificial intelligence and the speed of computer networks."

[134] Tim Healy, *The Unanticipated Consequences of Technology* (Paper presented for the Markula Center for Applied Ethics at Santa Clara University, 2012), Accessed October 24, 2012, http://www.scu.edu/ethics/publications/submitted/healy/consequences.html. Healy relates unintended consequences to complexity, independent control systems, unknowns, and ignorance.

curriculum in *Experience and Education* (1938).[135] In *Art and Experience* (1934), however,

Dewey identified immersive experiences as the penultimate method of learning. Dewey

examines immersive experiences in relation to art, and thereby defines an aesthetic experience,

> "Art as experience, actuality and possibility or ideality, the new and the old, objective
> material and personal response, the individual and the universal, surface and depth, sense
> and meaning, are integrated in an experience in which they are all transfigured from the
> significance that belongs to them when isolated in reflection."[136]

The relationship between the individual, the object, and the environment is crucial to the

aesthetic experience – the simultaneous merging of time, space, culture, emotion, and person into

a moment or, in Dewey's words, experience. Since time is of paramount importance in the

equation, the aesthetic experience is impossible to have through scientific inquiry or

examination. To abide by Dewey's definition, the aesthetic experience must be felt, and it must

be transformative.[137] *Art and Experience* follows the pragmatist tradition by emphasizing the

importance of the individual in a learning experience that is social and interactive. This paper

has championed online learning as a constructive process, yet Dewey's thoughts in *Art and

Experience* reveal what is lost during that transition.   The dematerialization of the object

prevents the aesthetic experience by removing the social qualities of the object, relating to

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[135] *John Dewey, The Child and the Curriculum (Chicago: The University of Chicago Press,
1906).* Dewey attacks traditional schools of thought for placing too much emphasis on subject
matter and ignoring the needs of the student, and asked teachers to place more stock in the
student as individual with a unique background, history, and experiences.
John Dewey, *Experience and Education* (Indianapolist: Kappa Delta Pi, 1938) In *Experience and
Education* (1938). Dewey deals with critics of the pragmatist school who believe that Dewey
placed too much emphasis on the individual. In Experience and Education, Dewey clarifies that
the student and the curriculum are like two poles, and that between them, educators must provide
subject matter that inspires the student and encourage them to make positive contributions to
society.
[136] John Dewey, *Art as Experience* (New York: Berkley Publishing Group, 1934): 297.
[137] Ibid., 77 "If all meanings could be adequately expressed by works, the arts of painting and
music would not exist." Ibid., 70, "The unique, unduplicated character of experienced events and
situations impregnates the emotion that is evoked."

culture and background, and the interactive qualities of the object, relating to time and space.

The social and the interactive qualities are removed when the object is pixilated and viewed

through a screen rather than experienced in an immersive and authentic setting. The unification

of self, object, and universe cannot be achieved on the World Wide Web. This argument is

strengthened by alluding to Dewey's importance of the background, "Things, objects, are only

focal points in a here and now in a whole that stretches out indefinitely."[138]

John Dewey's relationship with the Barnes Foundation elucidates his respect for the

aesthetic and personal experience.[139] Barnes used his artwork to acquire impressive artwork, and

started the Barnes Foundation so that his collection could be used to train the public to appreciate

art. Barnes displayed his collection according to his theory of aesthetics rather than traditional

categories of style, period, artist, or region. He hence arranged the work to provide the masses

with a means of understanding art by feeling rather than formal instruction. As a result, he

developed formal bylaws that prevent the rearrangement or distribution of his artwork.[140]

Dewey supported Barnes's emphasis on the aesthetic experience in the galleries, and he

described the Barnes Foundation as "the most thoroughgoing embodiment of what I have to say

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[138]Ibid., 200.

[139] Newman Robert Glass, "Theory and Practice in the Experience of Art: John Dewey and the Barnes Foundation." *Journal of Aesthetic Education* 31, no.2 (1997): 91-105. Albert C. Barnes was born into a working class family, trained as a doctor and chemist, and then acquired a small fortune through his business affairs. Barnes refuses to title the paintings or to catalogue the artwork. He wanted the collection to focus on units of artwork, rather than individual pieces. The importance of the artwork rested in the relation that it held to the whole. If an individual work is removed from the setting, the meaning attributed to the piece as part of the whole would be lost.

[140] Ilana H. Eisenstein, "Keeping Charity in Charitable Trust Law: The Barnes Foundation and the Case for Consideration of Public Interest in Administration of Charitable Trusts," *University of Pennsylvania Law Review* 151, no.5 (2003): 1747-1786.

about education."[141] In addition to the critiques already attended above, such as the threat of the

disappearance of expert knowledge and of an ultimate rise of a surveillance society; there is no

denial that Dewey's ideas present yet another challenge to the integration of digital technologies

into museum education. His writing on learning through experience and his association with the

Barnes Foundation demonstrates what is lost as educators interact with online communities: the

tangible, and the "universal" qualities of the experience. What is gained, however, are the

opportunities to democratize art and education, and to expand learning with digital tools.[142]

Slavoj Žižek is known for presenting "his work in a polemical fashion, knowingly

striking out against the grain of accepted opinion."[143] As enthusiasm for online platforms and

networks continues to grow in the Western world, Žižek remains conservative about the

technology, and points out the potentially disastrous problem of "disavowing the Real in favor of

another Symbolic world behind it."[144] Žižek would take issue with the majority of this thesis; his

greatest areas of contention would likely revolve around using online platforms to educate the

masses, and using virtual reality as a learning tool.

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[141] Newman Robert Glass, "Theory and Practice," 91-105. "The most thoroughgoing
embodiment of what I have tried to say about education, is, as far as I am aware, found in an
educational institution that is concerned with art. I do not know whether it is a matter for surprise
that education in the esthetic field should be the first to do the obvious and simple thing. But I do
know that hardly a week -certainly not a month-passes that I do not receive a letter... which asks
why there is such a gap between educational theory and educational practice.... I have ventured,
therefore, into this brief summary of educational theory because this volume of the Barnes
Foundation is so adequate an exemplification of what that theory means in practice." -John
Dewey, in his foreword to The Art of Renoir

[142] For example, an exhibition by Halsey Burgund at the deCordova Museum used museum
space to explore how environment influences an auditory landscape. For the piece, he created a
site-specific sound installation for the sculpture garden of the museum. Visitors to the exhibit
were asked to use their mobile phone to either listen to a soundclip or create a soundclip specific
to the site.

[143] Internet Encyclopedia of Philosophy, s.v. "Slavoj Zizek," accessed October 23,
2012,http://www.iep.utm.edu/zizek/

[144] Tony Myers, *Slavoj Zizek* (New York and London: Psychology Press, 2003): 50.

Žižek is widely referenced when discussing ideological agendas intended to raise the Other.[145] Žižek argues that ideologies are social constructs like any other, and that a campaign to empower another group (ie make them similar to the acting agent), is based on the false premise the culture or beliefs of the acting agent are superior.[146] The acting agent seeks to help when they identify a difference (often seen as a lack) in the Other. Žižek observes that individuals use the identified difference to distinguish themselves against the Other, and that humanitarian causes arise as a means of disguising the underlying causes of exploitation, often a socio-economic situation that creates the difference.[147] He also takes issue with programs that claim to promote tolerance, such as the global online projects, for reducing the Other, and only making "the Other okay in so far as this other is only a question of food, of culture, of dances." [148] Žižek's research makes valid points for considering the serious and far-reaching consequences of seeking to educate the masses, and particularly with using technology to reach groups not traditionally accustomed to the methods or material. Whether Žižek's argument is strong enough to prevent humanitarian causes from being pursued is beyond the scope of this paper, but his research should be used as a touchstone for identifying the social construct that guides the

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[145] Slavoj Žižek, *For They Know Not What They Do: Enjoyment as a Political Factor* (Brooklyn and London: Verso Publishers, 2002).

[146]Internet Encyclopedia of Philosophy, s.v. "Slavoj Zizek." The Marxist definition of ideologies is defined as "discourses that promote false ideas (or "false consciousness") in subjects about the political regimes they live in." Zizek classifies ideological positions as the positions used to identify Others.

[147] Slavoj Žižek, *Enjoy Your Symptom!: Jacques Lacan in Hollywood and Out* (New York and London: Psychology Press, 2001): 8. "It is easy to love the idealized figure of a poor, helpless neighbor, the starving African or Indian"… "as long as he stays far enough from us, as long as there is a proper distance separating us." He also points out that if the Other is sucessfuly raised to the acting agent's level, the result of a successful mission, then the compassion for the individual would cease as the differences between the two parties were eliminated.

[148] "The one measure of true love is you can insult the other: An Interview with Slavoj Zizek," by Sabine Reul and Thomas Deichmann, Spiked Magazine, November 15, 2011, accessed October 23, 2012, http://www.spiked-online.com/Articles/00000002D2C4.htm

actions of an individual or institution as they interact on the World Wide Web.[149]

Žižek's argument against ideological agendas is important when discussing a topic that proposes methods of educating the masses, but his research on cyberspace is perhaps more threatening to institutions planning to engage online audiences. As previously examined in the section on transparency, Žižek is critical of digital environments that are entirely constructed, and cautions users about the repercussions of being immersed in environments that are divorced from the Real.[150] Žižek identifies two possible outcomes for interacting in alternate realities, and both of them have destructive outcomes: the first outcome is active nihilism, "the sense of wanting nothing itself," and the second is passive nihilism, which is "living life without great passions."[151] Active nihilism arises when users are exposed to an array of virtually crafted experiences that are more pleasing or easily attainable than those available in the Real. Passive nihilism, on the other hand, results from being exposed to such an overwhelming abundance of stimuli that users become apathetic. Online platforms create the opportunity for individuals to develop active and/or passive nihilism by creating artificial opportunities for engaging with Others (in social networks and online communities), and providing a seemingly endless supply of digital media (examples of media include information made available by individuals on social media sites, as well as digital media distributed on organizational websites, such as METPublications, MoMA digital gallery, Tate Channel videos). Žižek suggests that both types of nihilism promote violence because the Real must become more intense to provide an

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[149] The opposing argument, as demonstrated throughout this paper, is that educational opportunities afford individuals and communities a means of increasing their quality of life –if not simply through enhanced critical thinking skills and imaginative capabilities, then possibly by acquiring the skills necessary to obtain a higher-quality of life. As mentioned, how this related to poverty, to community and economic development, is beyond the scope of this paper.
[150] Slavoj Žižek, "Cyberspace, or the Virtuality of the Real."
[151] "The one measure of true love is you can insult the other," by Sabine Reul and Thomas Deichmann.

experience as thrilling or satisfactory as the virtual. Society transforms and adapts as technology evolves, and the unintended consequences have the potential to be extremely grave. Žižek cautions digital enthusiasts to understand the repercussions of technology, and he cautions, "the most dangerous thing today is to just go with the flow of things."[152]

This paper has championed using digital platforms to create personalized learning opportunities for a large and diverse audience, but it has also pointed out many of the serious repercussions of pursing this agenda. As with any program, administrators should do their best to understand all possible outcomes, and allow an informed analysis of the costs and benefits to decide the appropriate course of action.

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[152] "The one measure of true love is you can insult the other," by Sabine Reul and Thomas Deichmann.

CHAPTER 11: CONCLUSION

Anne Balsamo, whose ideas have provided a basic inspiration for this thesis, received a

grant from the MacArthur Foundation in 2009 to study the relationships between the

technological imagination and museums. Her research led to "the broader argument that the

technological imagination is a key sensibility of lifelong learners who reside in the 21st century,"

and the publication of her book, *Designing Culture: The Technological Imagination at Work.*

Designing Culture examined how technology affects culture on a grand scale, and Balsamo is

reporting on how technology affects museums on DMLcentral, a blog hosted by the MacArthur

Foundation. [153] The first post related to Balsamo's research on techno-culture and museums was

made on August 16, 2012. Balsamo's collaboration with the MacArthur Foundation speaks to

not only the relevance of integrating digital technologies into museum education, but also the

ongoing discussions to engage with the digital world's potentials and unresolved problems.

As technological progress transforms thinking, learning, and creativity, museums need to

respond to the change in order to remain relevant. One solution is for museums to design online

platforms that enhance learning based on John Dewey's Constructivist Learning Theory and

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[153] Anne Balsamo, "Inspiring the Technological Imagination: Museums and Libraries in a Digital Age," (Blog hosted on the DML Central: Digital Media and Learning: The Power of Participation Website, August 16 2012). Accessed October 1, 2012, http://dmlcentral.net/node/5109. The blog is a literature review of the grant that documents the research related specifically to inspiring the imagination in museums. The following posts will eventually be added: Inspiring the Technological Imagination: Museums and Libraries in a Digital Age; Libraries: Setting the Context. From National Efforts to Create Digital Archives to Local Efforts at Access Equality; Digital Media in Community Libraries, Part 1: From Information Access to Creative Participation; Digital Media in Community Libraries, Part 2: Teen Websites; Digital Media in Community Libraries, Part 3: Games and Gaming; Digital Media in Community Libraries, Part 4: The Case for Virtual Libraries; Digital Media in Community of Libraries, Part 5: Media Workshops; Museums: Setting the Context; Mobile Experiences in Art Museums; Museums Collections: Digitization-Dissemination-Dialogue; Virtual Museums: Where to Begin?; Online (art) museum Experiences; Learning from the Edges, Part 1: The Importance of Play; Learning from the Edges, Part 2: Tinkering in a Digital Age; Libraries and Museums in a Digital Age: Resources and Web links

John Falk's Contextual Learning Model. Online learning programs based on these theories will help ensure that museum educators understand why the public is learning with the museum, and also develop programs that address the individual learning needs of visitors. Museum platforms can incorporate social media tools into the curriculum to ensure that the museum is not simply operated for the people, but by the people. As with any curriculum, educators designing programs with emerging technologies should be aware of the drawbacks and risks associated with the medium, and seek to find the right mix of virtual, physical, and augmented learning opportunities for the individual.

The research presented in this paper is meant to provide a possible framework for exploring how to channel the singularity into meaningful learning projects inside the museum. The information is not presented as novel – museums and scholars (many of them using online platforms) are currently researching these topics and developing methods of implementation. This information is presented as valuable only for documenting the shift in a historical framework, presenting possible theories to guide digital learning initiatives, and providing suggestions for learning with digital tools.

CHAPTER 12: IMAGES

Image 1. Chart demonstrating the multiple funding streams that effect museum revenue, including federal, state, local, and private sources. Each museum has a unique funding structure that supports operations, and a small historic museum might be entirely run by donations, while the MET is supported by a diverse set of private donations and government funding. When an economy is in a recession, however, museums as a whole usually experience funding cuts because both donors and the government are able to give less to the arts (From Urban Institute analysis, IMLS Museum Public. Finance Survey, 2008).

Museum Type	Source of Support				N
	Private	Earned	Investment	Government	
Art Museums	23.3%	46.1%	17.5%	13.1%	129
Children's Museums	24.4%	48.1%	20.5%	6.9%	41
History Museums	32.9%	21.6%	13.2%	33.2%	235
Natural History and Natural Science	29.5%	41.6%	5.7%	23.6%	39
Science and Technology Museums	22.8%	42.8%	4.0%	30.4%	41
Historical Societies	32.2%	21.5%	24.7%	21.6%	132
Arboretums and Botanical Gardens	34.1%	28.9%	13.7%	23.3%	29
Zoos, Aquariums and Zoological Societies	17.4%	60.3%	4.2%	18.1%	39
Hybrid and Other	27.2%	38.5%	9.6%	27.5%	48
Overall	24.4%	43.7%	12.2%	19.7%	733

Image 2. Tate Channel screenshot that shows the variety of learning opportunities on their website, including an online course on the history of art, a channel with educational audio and video recordings, and a discussion forum for emerging artists (From Channel Tate," Tate Website, Accessed August 22, 2012, http://www.tate.org.uk/context-comment/audio-video).

Most recent

PRE-RAPHAELITES : VIDEO

TateShots: The Muses

Three modern muses, Karen Elson, Daisy Lowe and Laura Bailey, visit Tate Britain to meet the women at the heart of the Pre-Raphaelite movements most celebrated paintings

Watch all three videos   ▸
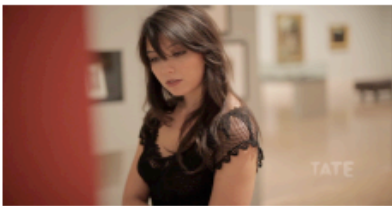
PRE-RAPHAELITES : VIDEO

Pre-Raphaelites: Curator's choice - Millais's Isabella

Curator Jason Rosenfeld reveals the story behind John Everett Millais's painting Isabella

Watch and comment   ▸

EXHIBITION FILM

The Tanks: Haegue Yang

Haegue Yang's installation at the Tanks comprises intricately constructed metal structures that performers move around on wheels

Watch and comment   ▸

Image 3. MoMA Digital Member Lounge screen shot that demonstrates the programs offered by the digital member lounge (From "Digital Member Lounge," Last modified 2012, Accessed October 24, 2012, www.moma.org/support/membership/member_site/landing).
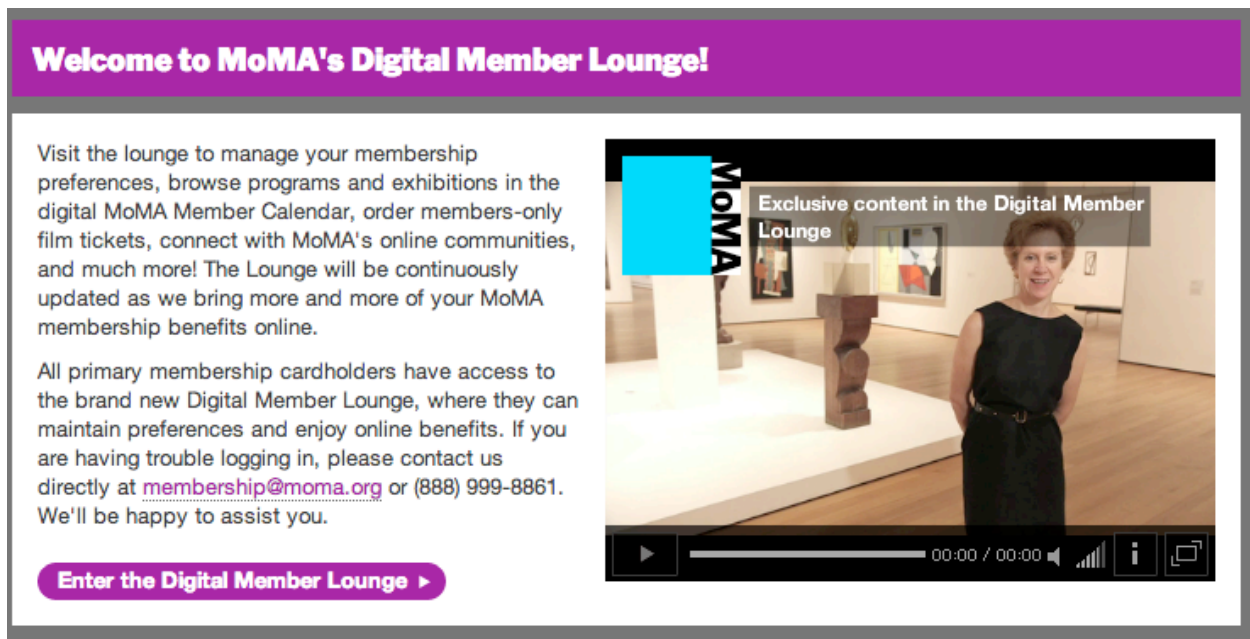

Image 4. *Archdukes Albert and Isabella Visiting a Collector's Cabinet,* Jan Brueghel the Elder and Heronymous Francken II, 1621-1623.

Image 5. Graph displaying reasons for ethnic variances in museum attendance (From Betty Farrell, "Demographic Transformation.")

Image 6. Guggenheim "About Us" screenshot that shows staff biographies divided by museum department for the public to review (From "Staff Profiles," Guggenheim, 2012. Accessed May 12, 2012, <http://www.guggenheim.org/new-york/about/staff-profiles>.)

Image 7. Screenshot from the Mark Bradford Project Blog that shows a *Team Mark Bradford* meeting (From "Video: The Mark Bradford Project Team Meeting," The Mark Bradford Project, 2011. Accessed May 2012, 2012, http://themarkbradfordproject.org/page/5.)

VIDEO: THE MARK BRADFORD PROJECT TEAM MEETING
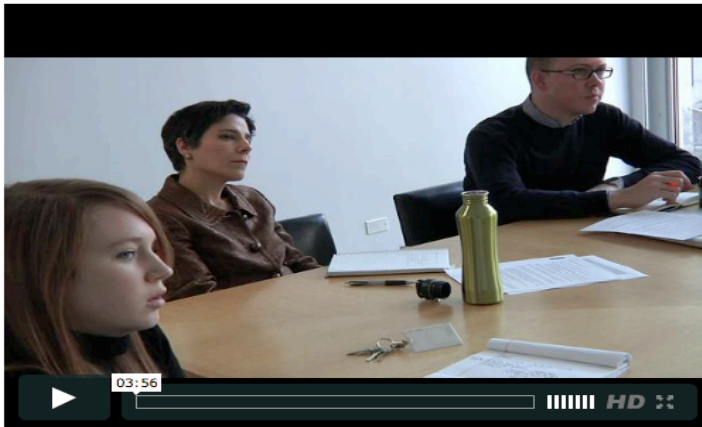
Erika Hanner leads a TMBP team meeting to discuss Mark Bradford's February visit to Chicago. Meeting participants: Angelique Power, Tricia Van Eck, Jackie Terrassa, Marissa Reyes, Elena Goetz, Chaz Olajide, James Goggin, and Mia Wicklund, plus MCA interns Sara Noori and Jennifer Pearson.

Image 8. Tumblr screenshot of a photography pages run by institutions, businesses and individuals. (From "Photography Spotlight," Tumblr, 2011. Accessed October 24, 2012, http://www.tumblr.com/spotlight/photography.)

LIFE
The official Tumblr for LIFE. Showcasing images from the iconic LIFE Magazine archives to never-before-seen photos.

New York, NY

Explodingtorium
An exceedingly well-curated selection of images from the vaults of the one-and-only Exploratorium, San Francisco's museum of science, art, and human perception.

Photographs on the Brain
POTB is the Tumblr outpost of LPV Magazine. Consider it our daily digest of links, quotes, excerpts and photographs from around the web.

Queens, New York

Patrick Romero
Personal and editorial work. Lives in the entertainment capitol of the world.

Historical Indulgences
An eclectic collection of photographs focused mainly within the curious and often misunderstood realm of 19th century America.

Lensblr
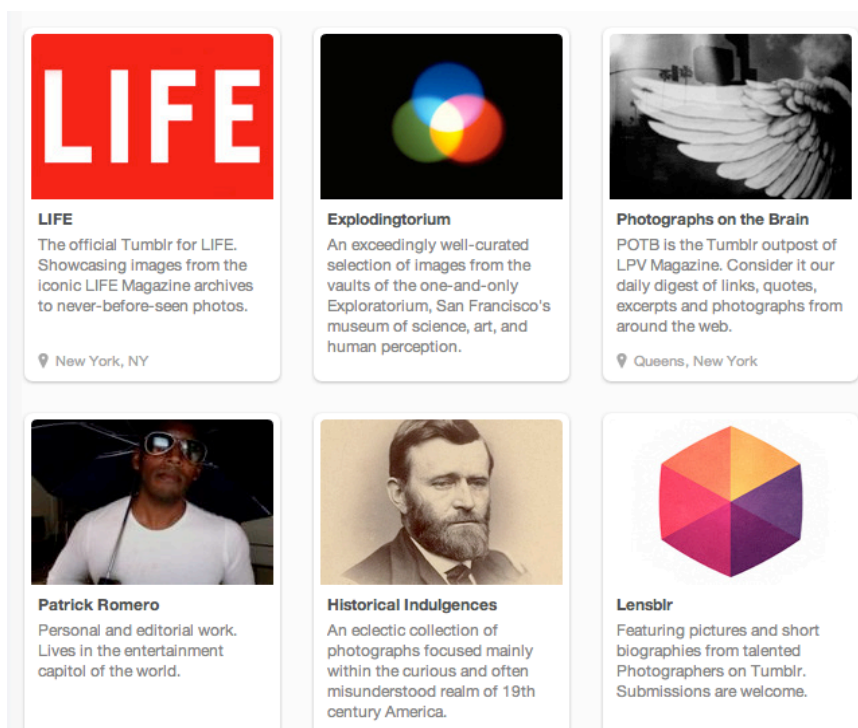Featuring pictures and short biographies from talented Photographers on Tumblr. Submissions are welcome.

Image 9. Flickr screenshot of community site created to explore Macro Photography (From "About Closer and Closer Macro Photography NEW RULES," Flickr, 2011. Accessed October 24, 2012, http://www.flickr.com/groups/52241335207@N01.)
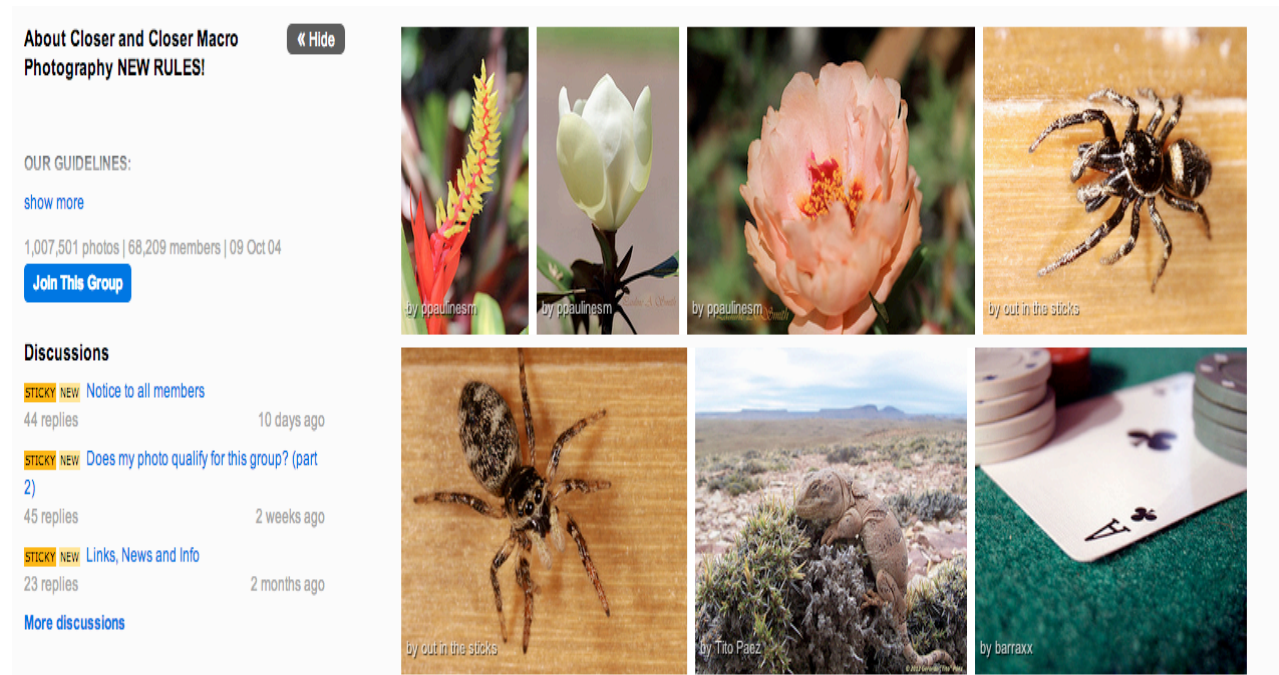

Image 10. Screenshot from Pinterest showing how learning occurs in visual galleries (From "Mari Lathrop," Pinterest, 2011. Accessed October 24, 2012 http://pinterest.com/marislathrop/randomness/).

Image 11. Image from a blog that teachers followers about digital photography (From "Photography Friday 1: Introduction," Aimee Lane Blog, 2011. Accessed October 24, 2012, http://www.itsoverflowing.com/2012/01/photography-course-overview/.)

We'll learn how to set our cameras for that senario soon enough! Just putting a little bug in your ear! I think it's just like most things in life, it's best used with moderation!

Definitely experimenting with this will help you and your camera work better as a team! The perk to learning ISO is, it has the potential of really ENHANCING the quality of your pictures!!! So let's get to the application part of our tutorial!

Image 12. JR's Inside-Out-Project at the Standing Rock Reservation, North Dakota (From "Best of 2011," Inside-Out-Project, 2011. Accessed October 24, 2012, http://www.jr-art.net/projects/inside-out-project-group-actions.)

Image 13. JR's Inside-Out-Project at the Naplous (From "Time is Now Yalla", Inside-Out-Project, 2011. Accesed October 24, 2012, http://www.jr-art.net/projects/time-is-now-yalla.)

Image 14. Screenshot demonstrating how Google Goggles works to convey information about artwork (From "Google Goggles in Action," Google Goggles, 2011. Accessed October 24, 2012, http://www.google.com/mobile/goggles/#artwork.)
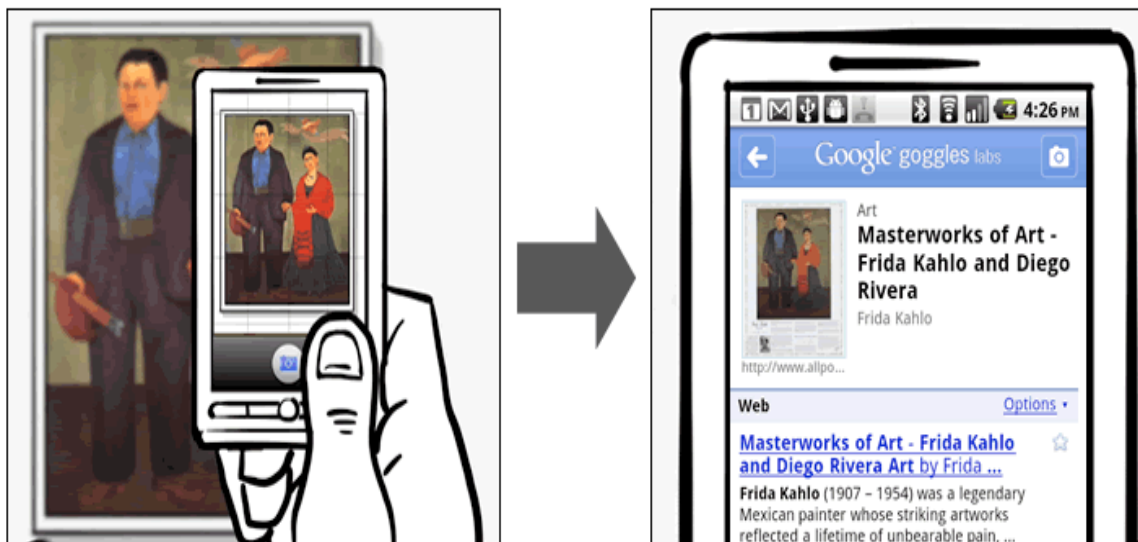
Image 15. Image of Puppy at the Guggenheim Bilbao. Koons, Jeff. *Puppy*, 1992. Guggenheim Bilbao, Vizcaya.

Image 16. Screenshot of layar designed for the Andy Warhol Museum (From "The Warhol: DIY Pop," The Warhol, 2011. Accessed October 12, 2012, http://www.warhol.org/connect/mobile.)

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Real%20-%20Slavoj%20Zizek.pdf.

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