

MuseumsForward

Digitization: worker perspectives at R1 university art museums

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Abstract

While not a new phenomenon, “digitization” has forcefully inserted itself into conversations about accessibility within the last few years, due especially to the changing landscape of school and work that began in 2020 with the COVID-19 pandemic, the rise of working from home, and the expansion of online spaces. All museums are spaces that have the potential to be affected by larger technological changes, but not all types of museums have been a part of the conversation, specifically, art museums on R1 university campuses. The purpose of this exploratory study is to examine the current state of digitization at R1 university art museums, based on the perceptions of staff members. Museum staff working in collections-related positions at five public universities have been surveyed to understand what they see as the place of digitization in their institution, how their institution supports digitization, who they see as being affected by digitization efforts, and what their role and the role of their colleagues is concerning digitization efforts at their specific organizations. To answer these questions, workers at R1 university art museums were surveyed to gauge their beliefs about their work specifically, and the role they see digitization having more generally at their institutions. Outside of data from workers, data on the institution was collected as well. This includes the number of students at the university, the size of the institutions collection, whether the museum’s mission finds research to be important, and a rating. Ratings were based on a point system and were intended to draw attention to the actual accessibility of the public digital collection, which may or may not correspond to the responses of staff. This study is important because it attempts to bring attention to a blind spot in accessibility to the institution’s collections. While it can be simple to assume that making more information available to the public is a net good, without deeper inspection of these “obvious truths,” it is impossible to know for sure whether efforts may ultimately be in the museum’s best interest. This study demonstrates several things. First, it shows that museum workers, while they may work at institutions of similar sizes and work in positions that share similarities with each other, do not all agree on the role of digitization, and they show that

their institutions take different stances on the questions presented. There seems to be a general feeling that digitization is useful, or, at the very least, unavoidable, but there does not seem to be wide support from the institutions to expand digitization efforts. A well-planned and robust digital collection can grant research access to students who may not be able to visit the museum in person, and the online collection can even provide information that may not be accessible in person, like detailed metadata or the ability to zoom in on an artwork's physical details. With all of this in mind, it is useful to see this study as a first step that helps to highlight the gaps in an area of museum work that is only becoming more and more prominent as the world changes.

Keywords Digitization; university art museums; worker perspectives

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Introduction While not a new phenomenon, “digitization” has forcefully inserted itself into conversations about accessibility within the last few years, especially within the changing landscape of school and work that began in 2020 with the rise of working from home and the expansion of online spaces. This can be connected to several different factors, but the most obvious are improving technological devices and the COVID-19 pandemic. While lockdown is behind us, considerations about the usefulness of digital collections are not. All museums are spaces that have the potential to be affected by larger technological changes, but not all types of museums have been a part of the conversation, specifically, art museums on R1 university campuses. A more complete exploration of these spaces is needed, and while this could be done in several ways, this specific study chooses to enter the space through the gathering of perspectives of the staff members working at these museums.

Problem

This is an exploratory study examining the current state of digitization at R1 university art museums, based on the perceptions of staff members. Therefore, museum staff working in collections-related positions have been surveyed to understand what they see as the place of digitization in their institution, how their institution supports digitization, who they see as being affected by digitization efforts, and what their role and the role of their colleagues is concerning digitization efforts at their specific institutions.

The purpose of this study is to understand worker perspectives on digitization efforts at R1 university art museums. This study defines the digitization of museum collections as the scanning or photographing of a museum's analog collection, with the intention of adding these images to the museum's official website or making them accessible to consumers outside of museum staff.

This research study is framed by three main questions:

1. Who is served by publicly available digital collections in art museums at R1 universities, and are these groups being supported in their usage?
2. How is the institution as a whole supporting or hampering digitization efforts?
3. What do museum workers see as their role regarding digitization?

To answer these questions, workers at R1 university art museums were contacted and surveyed to gauge their beliefs about their work specifically, and the role they see digitization having more generally at their institutions. Several things must be noted about the sample size; it contains responses from eight people who work at five schools. Of those eight people, two did not complete the survey, instead choosing to send a written response. Therefore, due to the small size of the sample, broad generalizations about the state of the situation cannot be made. Instead, this study acts as a small window into the way that several universities of varying sizes across multiple regions of the United States have dealt with digitization in the past, how they are dealing with it now, and where they see their organizations going in the future.

This study is important because it attempts to bring attention to a blind spot in accessibility to the institution's collections. While it can be simple to assume that making more information available to the public is a net good, without deeper inspection of these "obvious truths," it is

impossible to know for sure whether efforts may ultimately be in the museum's best interest.

Literature Review

R1 Research Universities and University Art Museums

While the questions asked in this study may apply to other institutions, this study will solely focus on art museums located at R1 universities. To understand the larger goals of the study, a definition of what an "R1" university is and an abridged history of "university museums" is needed. The primary purpose of this literature review will be to define these terms, while adding additional clarification on what digitization is, its history in museums, the importance of digitization in expanding access to a museum's collection, and who uses these digital collections.

"R1," or "doctoral universities- very high research activity" is a label given to universities in the United States by the Carnegie Classification of Institutions of Higher Education. This subset of universities is focused on conducting research activity, must have \$5 million a year in research expenditures, and must confer at least 20 doctoral degrees a year (American Council on Education, 2024). Originally developed in 1973, the Basic Classification model classifies universities and colleges into broader groups, with the level of research being only one aspect used to determine categorization.

University museums are museums and art galleries that are associated with universities and colleges. These museum institutions are unique from other museums in that they are places that are not solely focused on the stewardship of a collection. Instead, these are spaces that hold items and disseminate information in service of the broader goals of the university they are associated with (Kelly, 2001). In this paper, "university museum" will use the International Council of Museums (ICOM) definition which states that a university museum "is a museum... that belongs to a university or, more broadly, a higher education institution" (Lourenço, 2019).

The history of university museums is, unsurprisingly, linked to the universities they orbit. One of the first university museums was the Ashmolean, founded in 1683 at Oxford University (Rorschach, 2004). The Ashmolean inspired American university museums, with collections becoming available at Harvard and Dartmouth in the 18th century. The first university art museum, the type of museum that is the subject of this paper, was founded in 1831 at Yale University (Yale University Art Gallery, 2024).

Before the late 19th century, museums, rather than universities, were seen as the main repository and dispenser of knowledge, making a university museum essential to a prestigious and fully realized university (Conn, 1998). The university art museum was seen as serving two essential purposes. First, these museums were an important part of an art history or studio art degree, granting students real-world experience with art. The other service that these museums were provided was more psychological and nebulous in nature. Essentially, these museums were places meant to improve the human mind. The hope was to make students better members of society, a goal, that while not as explicit today, can be seen through the museum's dedication to the larger intentions of the universities they belong to.

Missing from the literature is a comprehensive look at the way that digitization interacts with the everyday realities of the university museum. This includes the way that digital collections are used, who is using them, and how these collections are being displayed to the public. Of course, further exploration of this topic first requires a better understanding of what digitization is.

Digitization and Digitization in Museums

In the context of this paper, "digitization" will be defined as the scanning or photographing of a museum's analog collection in order to add these images and their corresponding metadata to the museum's official website to disseminate this information to the public. The act of digitizing goes beyond scanning or taking pictures of an object or image. Instead, "digitization" describes a more holistic approach to sharing information related to a work held by a museum (Kimura, 2023). Therefore, to "digitize" an object, an image must be taken, a detailed account of the object and image metadata must be recorded, and the image and the information must be shared with an audience outside of the internal structure of the museum.

Computers and digital collections have been in use at art museums since the 1960s and 1970s (Dahlgren and Wasielewski, 2021; Rikowski, 2011). Even so, a greater level of attention has been paid to digitization and digital collections within the last several decades, with the COVID-19 pandemic leading to an acceleration of the trend within the last few years (Bowen and Giannini, 2022).

Museums have also begun to see the place of digitization and their role in expanding digital collections in new ways, moving from novice-led information management to a more standardized network of digital

strategies that support in-house digitization work (Roberts, 2010). To support this digitization effort, museums have looked to the information organization done by libraries and archives. Instead of fully developing a system of information organization from scratch, museums have taken queues from libraries and adopted these systems, including those for categorizing digital metadata, for themselves (Urban, 2014). Despite this, whether or not university art museums are fully integrating these borrowed standards into their own work remains to be seen.

Digitization and Accessibility

It is estimated that only 5% of the world's museum holdings are physically accessible to the public (Corona, 2022). This is a minuscule fraction of the world's history that is capable of being shared, adding weight to the need to expand digitization efforts, especially in university art museums, where access to knowledge is seen as paramount. This study aims to bring light to this particular plight with the intention of highlighting the need for museums to put more thought into their digitization strategies.

With this in mind, it is necessary to consider the other reasons for the importance of digitization. First, it is argued that digitization is undertaken to preserve objects from the ravages of time and human intervention. Beyond this focus on tangible objects is the capability of digitization to serve a wider public. Arguably, disseminating images and their metadata is more important than the actual act of digitizing an object. The digitization of museum collections, especially those that are not often on display due to age or lack of space, helps to draw in audiences and deepens their connection to the museum more broadly (Palumbo, 2022).

Digitized collections are not merely a secondary, "less-than" version of the physical museum. Instead, digitized collections have a singular and unique role that expands beyond that of the museum proper (Everstijn, 2019). Including metadata and making this information available in concert with digital images is also necessary. Not only does this data help inform users, but it helps with navigating through an overabundance of images, and it helps provide access to those with impaired vision (Coyle, 2018).

While there are clear upsides that come from undertaking a digitization campaign, it is also understandable that a museum may question the reason for digitization in the first place. Is digitization taking financial

resources from other sectors, such as conservation or other preservation work, or is digitization further contributing to “edutainment” and distracting visitors and students from scholarship (Newell, 2012)?

Another important question to think about is the way that digitization can be used in a way that may become problematic to the health of a collection. Digitization efforts lead to expanded access to underutilized collections, but this only works if these collections are digitized in the first place. In other words, the increased attention to one subset of the collection can take away resources and attention from another portion of the collection that digitizers, collections managers, and curators see as unimportant or uninteresting. This leads to a double ignoring of this collection; after all, attention can only be paid by the public when they know that the collection exists in the first place (Hafner, 2007; Kandiuk, 2016).

Who Interacts with Digital Collections?

In 2014, data was gathered from the website of London’s Tate Modern to understand the ways that the site was being used (Villaespesa, 2014). This data revealed several things about who was accessing the digital collections and why. This is important information for university art museums to consider. At the Tate, a museum unaffiliated with an institution of higher learning, it was found that most users interacting with their digital collections did so in the capacity of a “student” or “researcher.” Are university museums, particularly those affiliated with an R1 school, not only aware of this but also reaching out to students and designing collection sites in a way that adds meaning to student’s usage? Perhaps not, as many digital collections are primarily organized in a way to supports users who know what they are looking for and are not set up for people who are taking a more exploratory approach to their website usage (Coburn, 2016).

While it is unclear whether or not another study such as the one completed at the Tate has been done since, it is still anecdotally shown that “researchers” and students use these sites most often (Durgun, 2020). Not only is this true, but it can also be argued that a more targeted approach to reaching out to this sector of people would improve the lives and experiences of these researchers (Rudy, 2019).

When considering their relationship with digital collections, R1 University art museums stand in multifaceted roles as both collectors and stewards of human artistic creation and as communicators of this cultural heritage to those beyond the walls of the physical museum (Parry, 2010). Museums

must integrate digitization and digital collections in their operations in a way that adds accessibility and democratizes access to the museum and its collection and does not simply work to uphold old systems of power (Valverde Martínez, 2021). Therefore, it is necessary to integrate these disparate ideas to more fully understand the way that digitization is being perceived by workers in R1 university art museums today.

Methodology

This exploratory case study utilized a Likert survey, short answer questions, and an analysis of the museum's publicly available digital collection (appendix 1 and appendix 2). Participants include collections managers, archivists, and registrars. It should be noted that due to the small size and specificity of the sample, broad generalizations cannot be made. Instead, this study acts as a small window into the way that five university museums of varying sizes across multiple regions of the U.S. have dealt with digitization in the past, how they are dealing with it now, and where they see their organizations going in the future.

The short answer data, Likert survey, and museum website were each analyzed differently. The short answers were examined individually, with responses acting as a lens into the individual respondent, their specific jobs, and the particularities of the organizations they work in. The Likert survey responses were grouped into three categories reflecting the research questions that framed the study, and the answers to each individual survey question were used to answer the larger study questions. These questions ask who is being served by publicly available digital collections in art museums at R1 universities, if these groups being supported in their usage, how are the institutions as a whole supporting or hampering digitization efforts, and what museum workers see as their role regarding digitization.

Finally, each of the websites was examined individually to further inform respondent's answers and to understand their perspectives in comparison to the realities of the digital collection's usability.

Study Design

This is an exploratory collective case study (Pickard, 2013). This mode of study design was chosen for several reasons. First, there is a lack of data on digitization efforts at R1 university art museums. Though work has been done to examine digitization procedures and effects state-run museums, the same work has not been done in university art

museums. Therefore, while I utilized the basic study framework used by others, the sites I examined have not been explored before.

Multiple cases were compiled; eight workers from five institutions participated in some way in this study. While each institution is unique, they were chosen due to certain similarities. So, while each site will be treated as an individual, they function as a whole to bring greater attention to the state of digitization generally, and not more specifically in the case of each individual worker or institution.

Due to the chosen study design, purposive sampling was used, and sites and workers were intentionally chosen. Once sites were chosen, staff were contacted based on their jobs and the departments they worked in. These workers had their roles in the museum listed on the institution's website and they were not student workers. Most importantly, staff all worked with the collection in one way or another; respondents included collection managers, registrars, and curators.

This study utilized surveys with museum professionals to gather information. The survey sent to participants was split into two portions. The first portion was a series of seventeen multiple-choice questions. A Likert scale was used for this portion to gather professional's personal opinions on the state of the field as they understood it. These questions were intended to answer one of the three research questions that informed the overall survey. Five short-form questions were inserted after the Likert scale portion of the survey. These questions were intended to collect demographic data on survey participants. Finally, a closer examination of the museum's website was conducted and given a rating based on its effectiveness.

Sample

Institutions were chosen for several reasons. First, only public R1 institutions in the United States were contacted. While there was not a specific reason for choosing public institutions over private ones, the difference in funding structures may have posed a potential complicating variable, necessitating that only one or the other type of institution be chosen. Second, only art museums were looked at. This was done purely to simplify the process of collecting data; while it is important to understand the way that digitization effects other types of institutions, this is outside of the scope of the study. Third, the institution's public web presence was considered; sites were required to have a digital collection of some type; the size of the digital collection or ease of use were not disqualifying or qualifying factors.

Institutions were distinguished with an identifier (ex.: UM1) to differentiate it from others while still ensuring privacy for the institutions and their staff. The staff member is identified by a second number tacked onto the end of the institution's identifier (ex.: UM 1.1) to distinguish multiple participants who worked at the same institution from each other. Each institution and worker have been identified by a number instead of the name of the institution or the name of the worker at the request of the workers.

Outside of data collected from workers, data on the institution was collected as well. This includes the number of students at the university, the size of the institutions collection, whether the museum's mission finds research to be important, and a rating. Ratings were based on a point system and were intended to draw attention to the actual accessibility of the public digital collection, which may or may not correspond to the responses of staff.

Results

Data was collated into a series of charts; answers to individual survey questions and demographic information was arranged to compare answers between respondents and staff worker perceptions in comparison to the realities of the available digital collection of their institution.

Question 1: Who is served by publicly available digital collections in art museums at R1 universities, and are these groups being supported in their usage?

For the purpose of this study, it is important to know how users are supported in their usage of digital collections. Workers, unsurprisingly, not only believe that it is important for their museum to make their digital collections available to students, and while it is seen as slightly less important, workers also believe it is important for their museum to make digital collections available to non-students. While most workers believe that their organizations make it easy for users to access digitized collections, several respondents do not see their organization as being interested in increasing accessibility to digital collections. This is in keeping with the importance that learning has in both the formal university learning setting and the informal museum learning setting.

A majority of workers believe that their institution makes it easy for the public to access their digital collections. There was a subset of staff who did not see their institution as making digital collections easy for the

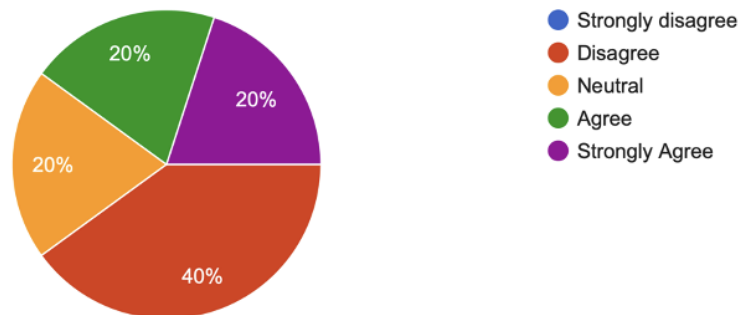
public to access; this may be for different reasons, including poor site design or a lack of a robust digital collection.

It can be difficult to know how well users are being serviced, specifically due to a limited evaluation of collections use. Only half of the workers surveyed said their museums collected data on museum website use; this means that the organization does not know who is using the site, how they are using it, and what can be done to improve the digital collections. A majority of respondents were not aware of evaluation being conducted or information being collected about the use of the website and its digital collection. This includes who is using the website and for what reason.

A majority of the museums surveyed do not gather feedback from those who interacted with collections (image 1). This shows that the museums are unable to understand how effective their collections are in reaching students and the public, how these collections are being used, what these collection's strengths and weaknesses are, what is most popular, and if the interface or display of the digital collection can be improved in any way.

Image 1

· We gather feedback from those who interact with digitized collections:



Question 2: How is the institution as a whole supporting or hampering digitization efforts?

Digitization does not happen in a vacuum. Instead, it is a long-term process that involves multiple stakeholders. One of the most important stakeholders is the institution itself; this importance comes from its

ultimate financial control over the ability to digitize collections and then make them available to the public.

Digital assets are shared with the public primarily through institution websites. Therefore, it is reasonable to assume that showcasing digital assets on their website is the best way to share information with students and the wider public. In respect to this particular study, the usefulness of sharing digital collections on the museum website may be harder to prove; most of these museums do not conduct evaluation of the use of digital collections while around half conducted evaluation of website use.

Most saw the museum's website as reflecting their individual missions, all of which, in one way or another, include a desire to educate. With this in mind, it is possible to infer a willingness to interact with processes, such as digitization efforts, which would expand access to learning.

However, workers did not see the website as being primarily focused on showcasing the museum's collection. Attitudes about this were primarily neutral at best and at worst, around a third of respondents did not see digital collections as the primary purpose of the museum website, leading to questions about the primary purpose of the website, whether it is meant as a space for press releases, exhibit announcements, or even something else entirely (image 1).

In contrast to this is the actual prioritization of the digital collection. This was split, with around half of the respondents generally believed that their institutions websites as they currently existed prioritized the digital collection, while the other half generally did not agree that their institutions were prioritizing the digital collection. This can be seen in the websites themselves; while workers did not generally agree that the main function of the website was to showcase the digital collection, there is a difference that can be seen in the ease of use. Some websites displayed link or search bar for the digital collection on the first page. On the other hand, other websites made the collection more difficult to find or search through.

There is an even split between workers who generally saw their institution as prioritizing digitization versus those who see their institution as being generally unenthusiastic about the project of digitizing their collections. This may be due to a lack of resources to fund large-scale digitization efforts or a belief that digital collections are less important than their physical siblings.

This leads to questions about understanding the overall usefulness of digital collections or even data about engagement with these collections in the first place. Most of the museums surveyed do not evaluate the use of their digital collections, making it impossible to know how these collections are being used, how often they are being used, who is using them, or even if users find their forays into the digital collections to be useful or lacking in some way.

Workers overwhelmingly believed that the website could be used as a substitute for a visit to a physical visit to the museum. While the agreement with this statement may be in understanding that general information, such as exhibit dates or opening hours, is fine to access online, this can also apply to digital images and metadata on these artifacts. Practical information, such as creation dates, measurements, and materials are simple facts that may not necessitate a visit to the museum. Having this information online may potentially be helpful to students or visitors who are interested in the museum and its holding but may not have the ability to visit the museum. Instead of withholding information due to an inability to visit the museum, granting easy access to this material allows for a variety of people to interact with the museum in some way, even if it is not ideal.

Additionally, workers saw their digital collections as offering unique experiences that cannot be found at the physical museum. This recognizes that while a trip to the physical museum cannot be replicated, digital collections can be useful in ways that physical exhibits cannot, such as allowing for a close-up look at a work of art.

Most staff see digitization as having a measurable impact on the museum, with about a third of respondents either disagreeing outright or feeling neutral about this claim. This shows several things. First, while the museum may not always act to prioritize digitization, this work is not without its upsides for the museum, which may benefit from further research on the topic. On the other hand, this work may not be impactful on the museum in a meaningful way, drawing into question whether digitization should be expanded or not.

There is a difference in the robustness in way the digital collections are displayed between the different organizations surveyed. Some websites only show images of some of the items that are currently on display. Others are much more advanced, with search features and detailed metadata. This metadata ranges from no information to information about the creator, materials, and even the provenance of the object.

In thinking about the drastically different modes of digital collection presentation between the different sites, UM 1.1 gave some insight into the challenges faced by small institutions that want to expand their digitization projects:

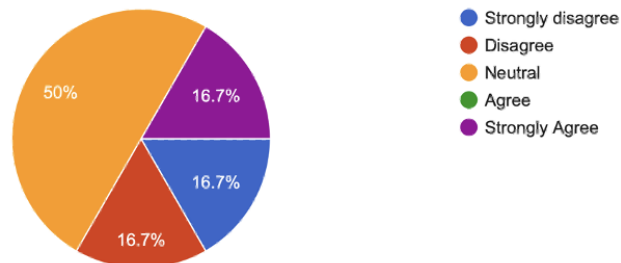
“Three years ago, the (museum) recognized that it could no longer avoid digitization and started digitizing pockets of the collection for use on the website, for licensing, educational, and other programming purposes. While we have managed image capture of 300-400 artworks, we lack the staffing resources to organize and label the images, and then to implement their use. We also do not have a sustainable long term storage solution identified yet and our website lacks a portal capable of displaying the digital images and the tombstone information”.

-UM 1.1

This specific quote comes from a staff member working at a museum with a limited digital collection; though the participant says their institution has digitized hundreds of objects, almost none of these images are publicly available. This means that despite the physical act of digitization work being done, digitization has only been partially completed. Without the sharing of digitized collections, the creation of digital images does not advance accessibility or students' ability to use the digital collection for research.

Image 2

The museum's website is primarily used to showcase digital versions of the museum's collection:



Question 3: What do museum workers see as their role regarding digitization?

While workers commented on the meaningfulness of digitization and digital collections and the importance of their museums in granting

access to this information, workers did not see themselves or the goals of digitization as being supported by the museum. None of the museums where staff surveyed worked had a role dedicated to digitization. While this may seem understandable for a small institution to not have a role dedicated to digitization, workers overwhelmingly did not feel supported by the museum in digitization work.

A majority of workers have not received training in digitization, nor have their institutions created any advisory boards to discuss and plan digitization strategies for the future (image 3). This leaves a hole; there is no way for the museum or its staff to understand what the theoretical goals of digitization are or what use it could have in their particular departments or institutions. This also means that there are no plans to preserve the works that have already been digitized.

None of the museums had a role dedicated to digitization; this is not itself entirely negative, as digitization could be a function performed as a part of another role. This could also be a part-time position, or a role performed by an intern or work-study student.

The workers surveyed saw themselves as having a variety of roles when it comes to digitization. This comes from the way that their museum defines the role of its workers. While these workers may have similar job titles or work in departments with similar names, their individual roles, and ultimately, the way they saw their work was unique between each person.

It is interesting to examine the answers from the workers at UM 3. While they work in the same institution their specific jobs mean that staff member UM 3.1 works more closely with digital collection than staff member UM 3.2. Worker UM 3.2 responded more positively to many questions while UM 3.1 answered neutrally to these questions or negatively. These results would require deeper conversations about the specifics of *why* each worker responded the way they did, but unfortunately, that is beyond the scope of the study. Despite this, it can be insinuated that the closer a worker's role is to the realities of digitization, the better understanding they have of the problems their institution has regarding creating available digital collections.

In addition to communicating with staff members directly, I examined the museum's digital collection and gave each site a rating. With this information, it is possible to compare the perceptions of staff members to the actualities of the digital collections offered to the public. This has shown me some surprising things; for example, one of the staff members working at one of the museums that was tied for the lowest rating strongly agreed with the statement that the museum prioritized

digitization efforts. This can mean several things; based on worker responses from this particular institution, I know that they believe digitization to be important, but they do not have the funding for digitization at this time.

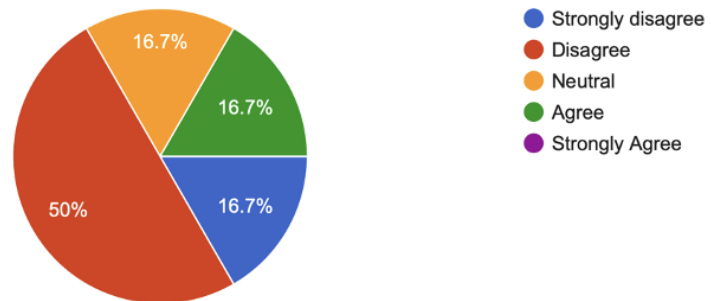
I gave each museum a code name to protect their identity. I then charted these museums and made a table with some demographic information, including the size of the museum's collection, the size of the university's population, whether the museum's mission statement mentions research as being important to their mission, and I gave each museum website's digital collection a rating (appendix 3). Each site could have a maximum score of 14; this criterion depends on several factors, including the level of detail concerning its metadata, whether the site had a search function, and how many items were in the digital collection. This demographic information and rating is important; first of all, it is important to know how many students can potentially be served by a better site, the collection size to know how much has been digitized and how much still needs to be digitized, mission, to understand if the museum reflects the university's mandate to prioritize research, and the rating system is useful to understand participants answers better. For example, if the site was given a low rating, it would help give insight into why a participant may have responded negatively to a specific question. Based on five criteria, a score of 14 could be achieved (appendix 4).

This demographic information and rating system are valuable to the goals of the study; first of all, it is important to know how many students can potentially be served by a better website, the collection size lets us know how much work has been digitized and how much still needs to be digitized, knowing key aspects of the museum's mission helps us to understand if the museum reflects the university's mandate to prioritize research, while the website's rating acts as a check against workers opinions. Specifically, this rating system is useful to understand participants' answers better and to compare what participants said about their institution's digitization project to what is available to the public.

Responses and site ratings acted as a reflection of each other. In some ways, worker responses show the current usability of their websites; in other ways, responses display a disconnect between the actual robustness of the site and the perceptions of the workers. This highlights an important fact to keep in mind; this study reflects worker perspectives and attitudes, things that are not inherently mirrors of reality.

Image 2

There is available staff training or advisory boards to discuss and plan digitization:



There seems to be a general feeling that digitization is useful, or, at the very least, unavoidable, but there does not seem to be wide support from the institutions to expand digitization efforts. University art museums have not had their digitization strategies examined. While I was influenced by work by Palumbo and Kimura, who studied digitization strategies in state-run museums, the same has not been done for the university museum.

Much of the research looking at the way that digitization works within museums has been conducted outside of the university setting. It goes without saying that universities and their subsidiaries are highly focused on teaching and public communication with students, their families, and alumni (Rorschach, 2004). These specific stakeholders often have a level of commitment to the institution's university museums are associated with that may not always been seen in many non-university museums. Issues of school pride may factor in, but importantly, university museums are often relied upon by students during their studies. This creates a need beyond simple enjoyment; whether these students are studying art, science, or museum studies, these institutions are being relied upon to fulfill a need.

The results of this study examine the ways in which museum worker perceive their roles in relation to digitization. Through their answers, we are also able to consider the ways in which the broader institution has made gestures towards digitization and access to information.

Discussion

This is an exploratory case study meant to understand a particular phenomenon within a very specific type of museum. In addition to the specificity of the museum type, the limited number of participants, and the type of universities where these museums are, generalizations cannot really be made about digitization in general or other university museums. In spite of this, I believe my study is a first step that can bring attention to the blind spots in their current digitization strategies.

Especially since COVID, it has become clear that online accessibility is more important than ever before (Corona, 2021; Bowen and Giannini, 2022). A well-planned and robust digital collection can grant research access to students who may not be able to visit the work in person, and the online collection can even provide information that may not be accessible in person, like detailed metadata or the ability to zoom in on an artwork's physical details (Villaespesa, 2015).

This increase in accessibility is also specifically tied to student access and whether the university's mandate to prioritize research affects the digital collection, specifically because the digital collection can be used for research by students (Kelly, 2001).

Durgun, who runs the Alexandria Archive Institute's *Digging Digital Museum Collections Project*, has written extensively about issues with accessibility and museum's digital collections, has hit on several ideas that my research has corroborated or that has been seen in other studies, including that most users are researchers (Durgun, 2020; Villaespesa, 2015). Durgun states that many museums do not include collections search on their front page. While she does not include data for this point, based on the museum websites I examined, Durgun's idea appears to be true.

When thinking about roadblocks in granting more accessibility to a museum's digital collection, there are several factors that may make the process more difficult. Among these issues are concerns of legality, including the complicating factors of copyrights and trademarks (Hirtle, Hudson, and Kenyon, 2009). While the necessity of licensing will inform what a museum shares on their digital collection, this does not appear to be a concern shared by the workers surveyed in this study.

Instead, most conflict points appeared to be financially motivated in one way or another. In addition to the obvious limitations, such as an inability to pay for image reproduction technology, financial constraints also limit the amount of time a worker can spend on the tedious work of digitization. Without proper financial planning, no plans have been made for the long-term viability of image and metadata storing. As a consequence of poor or limited planning, long-term storage solutions

have not been created, meaning that there is the possibility of digitized material being lost or destroyed, an event that would be a disastrous waste of resources.

Increased access to digital collections is important, especially for those who interact with the collection with research in mind. This access can help with personal research, and it could even help with larger questions that have not been answered by others before, especially regarding identifying objects for repatriation, a process that may be difficult for staff members alone to research (Durgun, 2020; Newell, 2012).

Increased accessibility to digital collections can also increase researcher diversity; for much of the history of museums, museums located in the “Global North” have held much of the cultural holdings of peoples of the “Global South.” Therefore, these objects have been effectively hidden from much of the world, most importantly researchers who come from the communities that created these items in the first place (Drew, Moreau, and Stiasny, 2017).

In April of 2020, the Network of European Museum Organizations (NEMO) surveyed museums to understand the way that COVID-19 was affecting their online services. Based on this, around 25% of the six hundred fifty museums had increased the number of objects in their digital collections (NEMO, 2020). It was also found that the addition of digital collections was seen as one of the easier ways to increase online engagement. While this may seem counter to what my study demonstrates, mainly that digitization is difficult due to financial constraints, the main resource that is needed is staff time, and it does not require high levels of technical knowledge to perform. Specifically, the types of computer programs, such as Adobe Photoshop, cameras, and scanners used in digitization are not difficult to use once staff have been properly trained on them. This means that training time is relatively short, especially in comparison to the time spent on the actual digitization process and the aggregation of quality metadata.

The survey also found that while 60% of museums claimed to have increased their online presence through the usage of social media and the expansion of digital collections, only 13% increased their budgets for online activities. Also, it is interesting to note that at the time, 40% of museums claimed they saw an increase in online activity, ranging from a 20% increase to a mind boggling 500% increase. This, while an output of the early COVID-19 pandemic, acts as a way for museums to quantify how many people are interacting with their collections, an activity not seen among the majority of museums I examined. This is an

area where the museums studied in this project are potentially failing; in ignoring what data could be collected or by directly surveyed people who use the website, no matter their purpose for visiting the site, the museum is unable to learn what they can fix to increase engagement for visitors. This is especially troubling considering the museum's dual mission to serve the collection and the research universities they are associated with.

Implications

This study demonstrates several things. First, it shows that museum workers, while they may work at institutions of similar sizes and work in positions that share similarities with each other, do not all agree on the role of digitization, and they show that their institutions take different stances on the questions presented.

It is important to understand the limitations of this study. First, only eight workers participated in some way, with a smaller number (six) fully participating in the survey. These workers came from five institutions located in the mainland United States. Second, these institutions were all connected to public universities run by the states they resided in. No workers from private institutions participated. Third, only staff that worked in roles that could be tangentially related in some way to digitization, such as collections work, were surveyed. Finally, because only R1 schools and their art museums were surveyed, the results cannot be seen as applicable to non-R1 schools or non-art museums on campuses.

In mentioning this last point, it would be of high interest to look at the way that digitization is viewed in natural history, science, or medical museums. It would be of interest to see what the similarities and differences are, depending on the type of collection these museums had. While all museums want the public to engage with their collections, the specific nature of the collection and the field may make the habits of researchers and visitors different. The museum may account for these differences and provide a more robust digital collection.

Additionally, further research might reveal a difference in the way that private institutions handle the financial burdens of digitization. It would also be of interest to study the way that institutions with missions beyond that of research, especially at institutions that are primarily focused on fine or studio art or liberal arts more generally.

This study, while narrow in its examinations and survey size, can be seen as imparting important information to lay a basis of understanding. Again, while in no means exhaustive, answers from participants can give a window into the state of the field. The perceptions of workers are important; they give insight into the true goings on in the organization. With this information, staff can more readily understand where there are weakness and what can be done to reach a more desirable point. Perceptions are also worth strongly acknowledging, even when they may not be complete reflections of the truth; when workers feel as if their organization is lacking in some way, these negative perceptions can impact more than just these individual workers. To more fully understand the state of digitization outside of worker perspectives, a more in-depth examination of quantitative data regarding the actual number of items digitized, the number of items shared on the site, the number of hours spent on digitization work and planning, and a more robust understanding of the actual users of the digital collection would be required.

None of the workers surveyed said that their museums had a specific role dedicated to digitization efforts. This can be connected to a lack of funding for this type of role. It should be said that while the museum may not be able to afford a full-time staff worker to organize these activities, interns or work-study students may be able to work on digitization efforts under the supervision of a qualified staff member. Of course, an initial barrier to this eventual work comes in the form of a lack of technology to perform digitization work, including, but not limited to cameras, scanners, computers, and software such as Adobe Photoshop to edit images. This is not a quick or simple exercise; it would require increased institutional or grant funding, which could take months to years to access. Even with this, it is still in the institution's best interest to plan for digitization. While it may take years for a fully formed program to arise, it would ultimately be beneficial for the museum and the patrons they have been tasked with serving.

A well-planned and robust digital collection can grant research access to students who may not be able to visit the museum in person, and the online collection can even provide information that may not be accessible in person, like detailed metadata or the ability to zoom in on an artwork's physical details. With all of this in mind, it is useful to see this study as a first step that helps to highlight the gaps in an area of museum work that is only becoming more and more prominent as the world changes.

References

- "About: Yale University Art Gallery," 2024.
<https://artgallery.yale.edu/about>.
- Carnegie Classification of Institutions of Higher Education. "Basic Classification," 2024.
<https://carnegieclassifications.acenet.edu/carnegie-classification/classification-methodology/basic-classification/>.
- Coburn, John. "I Don't Know What I'm Looking for: Better Understanding Public Usage and Behaviors with Tyne & Wear Archives & Museums Online Collections." January 29, 2016.
<https://mw2016.museumsandtheweb.com/paper/i-dont-know-what-im-looking-for-better-understanding-public-usage-and-behaviours-with-tyne-wear-archives-museums-online-collections/index.html>.
- Corona, Lara. "Digitization for the Visibility of Collections." *Collection and Curation* 42, no. 3 (May 17, 2023): 73–80. <https://doi.org/10.1108/CC-06-2022-0024>.
- Corona, Lara. "Museums and Communication: The Case of the Louvre Museum at the Covid-19 Age." *Humanities and Social Science Research* 4, no. 1 (January 8, 2021): p15–p15.
<https://doi.org/10.30560/hssr.v4n1p15>.
- Coyle, Laura. "Right from the Start." *The Public Historian* 40, no. 3 (August 1, 2018): 292–318.
<https://doi.org/10.1525/tph.2018.40.3.292>.
- Drew, Joshua A., Corrie S. Moreau, and Melanie L. J. Stiassny. "Digitization of Museum Collections Holds the Potential to Enhance Researcher Diversity." *Nature Ecology & Evolution* 1, no. 12 (December 2017): 1789–90. <https://doi.org/10.1038/s41559-017-0401-6>.
- Durgun, Pinar. "Digital Museum Collections Research." *The Alexandria Archive Institute* (blog), March 23, 2021.
<https://alexandriaarchive.org/2021/03/23/digital-museum-research-challenges-and-lessons/>.
- Durgun, Pinar. "Who Are Online Museum Collections For?" *The Alexandria Archive Institute* (blog), December 17, 2020.
<https://alexandriaarchive.org/2020/12/17/who-are-online-museum-collections-for/>.
- Everstijn, Carla. "The Digital Presence of Museums and the Implications for Collective Memory," n.d. <https://mw19.mwconf.org/paper/the-digital-presence-of-museums-and-the-implications-for-collective-memory/>.

- Giannini, Tula, and Jonathan P. Bowen. "Museums and Digital Culture: From Reality to Digitality in the Age of COVID-19." *Heritage* 5, no. 1 (January 12, 2022): 192–214. <https://doi.org/10.3390/heritage5010011>.
- Hafner, Katie. "History, Digitized (and Abridged)." *The New York Times*, March 11, 2007, sec. Technology. <https://www.nytimes.com/2007/03/11/technology/11iht-web.0311history.4870417.html>.
- Hirtle, Peter B., Emily Hudson, and Andrew T. Kenyon. *Copyright and Cultural Institutions: Guidelines for Digitization for U.S. Libraries, Archives, and Museums*. Cornell University Library, 2009. <https://hdl.handle.net/1813/14142>.
- Kelly, Melanie, and Program on Institutional Management in Higher Education, eds. *Managing University Museums*. Education and Skills. Paris: Organisation for Economic Co-operation and Development, 2001.
- Kimura, Aya. "The Elements of Museum Digitization Procedure: A Case Study of Lithuanian Museums." *Journal of Baltic Studies*, February 28, 2023, 1–21. <https://doi.org/10.1080/01629778.2023.2185271>.
- Lourenço, Marta C. "Defining the UNIVERSITY MUSEUM Today: Between ICOM and the 'Third Mission' – International Council of Museums Committee for University Museums and Collections." ICOM Italy, May 24, 2019. <http://umac.icom.museum/defining-the-university-museum-today-between-icom-and-the-third-mission/>.
- Näslund Dahlgren, Anna, and Amanda Wasielewski. "Cultures of Digitization: A Historiographic Perspective on Digital Art History." *Visual Resources* 36, no. 4 (October 1, 2020): 339–59. <https://doi.org/10.1080/01973762.2021.1928864>.
- Newell, Jenny. "Old Objects, New Media: Historical Collections, Digitization and Affect." *Journal of Material Culture* 17, no. 3 (September 2012): 287–306. <https://doi.org/10.1177/1359183512453534>.
- Organisations, NEMO-The Network of European Museum. "NEMO Survey on Museums and COVID-19: How Museums Increase Their Online Activities." NEMO - The Network of European Museum Organisations, April 23, 2020. <https://www.ne-mo.org/news-events/article/nemo-survey-on-museums-and-covid-19-increasing-online-activities-of-museums>.

- Palumbo, Rocco. "Enhancing Museums' Attractiveness through Digitization: An Investigation of Italian Medium and Large-sized Museums and Cultural Institutions." *International Journal of Tourism Research* 24, no. 2 (March 2022): 202–15.
<https://doi.org/10.1002/jtr.2494>.
- Parry, Ross. *Museums in a Digital Age*. Florence: Taylor and Francis Group, 2010.
- Pickard, Alison Jane. *Research Methods in Information*. 2nd ed. Facet Publishing, 2013.
- Rikowski, Ruth. *Digitisation Perspectives*. Educational Futures: Rethinking Theory and Practice, v. 46. Rotterdam Boston Taipei: Sense Publishers, 2011.
- Roberts, Andrew. "The Changing Role of Information Professionals in Museums." In *Museums in a Digital Age*. Florence: Taylor and Francis Group, 2010.
- Rorschach, Kimberly. "Why Do Universities Have Museums?" Franklin Center, November 10, 2004.
https://today.duke.edu/2004/11/rorschach_1104.html.
- "Survey on the Impact of the COVID-19 Situation on Museums in Europe." Network of European Museum Organisations, April 2020.
https://www.nemo.org/fileadmin/Dateien/public/NEMO_documents/NEMO_Corona_Survey_Results_6_4_20.pdf.
- Times Higher Education (THE). "The True Costs of Research and Publishing," August 29, 2019.
<https://www.timeshighereducation.com/features/true-costs-research-and-publishing>.
- Urban, Richard J. "Library Influence on Museum Information Work." *Library Trends* 62, no. 3 (2014): 596–612.
<https://doi.org/10.1353/lib.2014.0005>.
- Valverde Martínez, Héctor. "When Digitization Is Not Enough. A Perspective from the Museum Field in the Digital Age." *Journal of Multicultural Discourses* 16, no. 1 (January 2, 2021): 42–52.
<https://doi.org/10.1080/17447143.2020.1859518>.
- Villaespesa, Elena. "Digital Audience Research: Understanding Visitors." *Museum-iD*, 2015. <https://museum-id.com/digital-audience-research-understanding-visitors-by-elena-villaespesa/>.

Appendix A

Survey Questions

1. We gather feedback from those who interact with digitized collections:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
2. Our organization provides training or skill-building for staff for possible learning curves associated with digitizing legacy collections:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
3. There is available staff training or advisory boards to discuss and plan digitization:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
4. The museum evaluates its website presence and use:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
5. The museum collects data on museum website use, such as visitor data and exhibit hits:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
6. Digitization has a measurable impact on the museum:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
7. The museum prioritizes digitization:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
8. The museum website prioritizes digital collections:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
9. Digital collections offer unique experiences that cannot be found when interacting in the physical museum:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
10. There is a specific role at the museum dedicated to digitization:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
11. From your perspective, it is important for a university's museum to make digitized collections available to students:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
12. From your perspective, it is important for a university's museum to make digitized collections available to non-students:
 - Strongly disagree, disagree, neutral, agree, strongly agree.
13. The museum makes digitized information easy for the public to access:

- Strongly disagree, disagree, neutral, agree, strongly agree.
14. The museum's website reflects the mission of the museum:
- Strongly disagree, disagree, neutral, agree, strongly agree.
15. The museum's website is primarily used to showcase digital versions of the museum's collection:
- Strongly disagree, disagree, neutral, agree, strongly agree.
16. When searching for specific information, the museum's website can be used as a substitute for a physical visit to the museum:
- Strongly disagree, disagree, neutral, agree, strongly agree.
17. The museum evaluates the use of digital collections:
- Strongly disagree, disagree, neutral, agree, strongly agree.

Appendix B

Short Form Interview Questions

Short Form Interview Questions (Please use this portion of the survey to expand on your thoughts and experiences):

1. What is your specific role at the museum?
2. How long have you been associated with the museum?
3. How long have you been associated with digitization efforts at the museum?
4. Do you have anything else you would like to share?

Appendix C

Institution Demographic Information

	UM 1	UM 2	UM 3	UM 4	UM 5
Number of Students	73,000	35,000	50,000	36,000	50,000
Collection Size	12,000	5,000	24,000	Data not available	10,000
Mission	Serve the public and students through research	Serve the public through connecting the museum to faculty teaching and research	Collecting, interpreting, and exhibiting art to present educational programs in support of research	They serve as a venue for the presentation of artists who advance research and learning.	No mention of research in mission
Rating	4	4	13	7	13

Appendix D

Digital Collection Rating System

Is the digital collection able to be accessed on the first page?

- 3 points: First page
- 2 points: In a dropdown menu; must be labeled as “collection” or “artwork” or something similar.
- 1 point: in a dropdown menu; under a name that has nothing to do with collections.
- Total points possible: 5

Does it have a search feature?

- 1 point: yes
- 0 points: no
- Total points possible: 1

How much of the collection is available?

- 1 point: Only current exhibits
- 2 points: Current exhibits and some collections (under 100 items).
- 3 points: Current exhibits and some collections (over 100 items).
- Total points possible: 3

Is metadata provided?

- 1 point: identifying information.
- 1 point: Measurements
- 1 point: Materials
- 1 point: Extra information
- 0 points: no information
- Total points possible: 4

Can you zoom in on the image?

- 1 point: yes
- 0 points: no
- Total points possible: 1

Maximum points possible: 14