Making Access Possible
The Human Impact of Digital Initiatives

Bridgette Garcia-Olvera and Carly Garzón Vargas

ABSTRACT

This paper[1] explores the impact of digital initiatives on access services workers at the University of California, San Diego (UCSD) and draws on the expertise and experience of non-librarian titled staff operationalizing "digital first" policies. Digital initiatives have been strongly prioritized by libraries to promote equitable access, cost-effectiveness, and technological growth at many libraries in California. The term digital initiatives *commonly refers to efforts that support the creation, preservation, access, discovery, and use of digital library resources. This term can encompass multiple interpretations and a variety of tasks.*

This paper includes a literature review, an examination of statistics regarding demand and adoption of digital materials in public and academic libraries in California, and a summary of the impact study of non-librarian staff at UCSD. The literature review suggested that the term digital initiatives *encompasses a broad scope of meanings and types of tasks, California State Library data suggest that a pattern of increased investment in digital initiatives adopted during the COVID-19 pandemic is continuing, and the information collected through the research at UCSD library suggests that non-librarian library workers play a growing role in managing, maintaining, and supporting these growing digital collections.*

INTRODUCTION

For decades, the digital library has occupied the imagination of library teams dreaming about the future. The digital era of libraries has seen the introduction of licensed material borrowing, digital cataloging, digital publication of scholarly materials, digital archiving and preservation, collaborative educational open-access initiatives, archived born-digital materials, scanning and digitizing print materials, and machine dispensing technology and print materials. As David Lewis recognized in 1988, however, this shift would represent fundamental changes in almost every aspect of universities beyond libraries: "The use of computers for teaching, holds great promise but also threatens to disrupt traditional roles and practices."[2] These changes continue to bring up new questions about the roles of library workers in the context of digital libraries.

Years of establishing a framework for digital services in libraries laid the groundwork for building solutions to remote access required during COVID-19 lockdowns. In response to a shift in user needs in 2020, existing digital services and collections in libraries expanded. Staff who worked at service points became proficient in these technologies and acquired a range of new skills. As Richard Maidment-Otlet noted, "Wherever there have been changes in technologies through time, the issues associated with those technologies and our use of information and knowledge have changed too."[3] Library staff have taken up the charge of supporting these changes. These teams

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have been largely responsible for educating and supporting users through this technological transition and supporting the logistics of implementing digital initiatives.

Although the collections are digital, human workers are still required to build, maintain, manage, and ensure accessibility for users. This work includes providing technical support and user services, purchasing, licensing, copyright clearing, paging materials, scanning materials, managing logistics of large-scale documentation projects, processing online reserves materials, managing preservation and digital asset management systems (DAMS), overseeing interlibrary loan, and collaborating with other institutions to establish reciprocal borrowing procedures. This work, frequently done by non-librarian staff, makes these initiatives possible. There is a bank of firsthand knowledge and experience of frontline staff and student employees that can be used to develop new initiatives.

BACKGROUND INFORMATION

Guiding Research Framework
In thinking about the shift and increase in demand for digital materials and services, the authors used the following questions to guide this research:

- How did previous library professionals imagine the digital library?
- How do digital initiatives look today?
- Was there a shift toward digital materials during the COVID-19 pandemic, and has this shift continued after the pandemic?
- What tasks are involved in making digital initiatives possible?
- What does this shift mean for the trajectory of the library and information science (LIS) profession?

The researchers relied on scholarly articles, publicly available statistics, internal statistics, and original research based on the experiences of colleagues at the University of California, San Diego (UCSD) academic institution. Within the organization, there are approximately 100 library professionals who work with digital initiatives and do not have a librarian title. The librarian job classification at many academic institutions provides professional protection and recognition. Many studies were able to locate named librarian work, but the invisible labor needed to sustain the work of maintaining licensed digital materials and archival digital initiatives done by non-librarian staff seemed to be missing from the discourse. These research questions aimed to find out more about the work of library staff in supporting digital initiatives.

UCSD Collection Composition
The digital collection at UCSD is largely made up of licensed materials. This makes a variety of materials available for researchers, students, professors, and members of the public. Licensed material includes published online journals, streaming video, audio media, eBooks, scans with purchased permissions, and collections of licensed or purchased art images. There are also special collections and archival material in a DAMs repository that archive special collections, academic projects, thesis material, and other archival material. The library also makes datasets and geospatial material available, as well as some of the programs necessary to access and manipulate these datasets. This study purposely keeps the term *digital initiatives* broad because the term is used to indicate many services and resources in library conversations and reflects the scope of the digital library and the challenge of defining digital initiatives. Some of this digitization work has been underway for more than 15 years in this particular institution. For the purpose of this study,

an increase in investment refers to access services and the expansion of work that ensures access to materials for the user.

LITERATURE REVIEW

Digital Initiatives Defined

Defining digital initiatives within the context of staff and user impact was the core of this research. The definition of digital initiatives varies across organizations, and the researchers found through the research methodology used that no singular explanation arose. The phrase *digital initiatives* appears to be a catch-all term that is loosely associated with the use of technological platforms, data collection, digitization, strategic planning, and many other tasks that directly work with different aspects of technology. There is also a rich history behind digital initiatives dating back to the decades when librarians were first asked to incorporate the use of computers within libraries. The term *digital initiatives* was not used until the 1990s.[4]

Job postings for digital-focused library positions refer to vague "technological skills" as a requirement that lists expectations and tasks but lacks specificity. General or vague skillsets that encompass competencies relating to technology are used to supplement specific program knowledge or digital literacy skillsets. In addition, there is an expectation that applicants possess soft skillsets that include flexibility, adaptability, and excellent communication skills.[5] Through this research journey, the researchers found that ambiguity, when it comes to both job postings and position descriptions, leads to employees acquiring specialized skills on the job. This may contribute to the increase in invisible labor performed by staff roles.

Staff Roles and Responsibilities

As more digital initiatives are prioritized and implemented in academic libraries, staff responsibilities have grown, and roles have evolved to encompass these changes and new directives. Digital competency skills are growing more common within what are considered traditional library skills. In addition to showcasing strong communication and customer service skills, staff are expected to "possess strong digital literacy skills—proficiency in various platforms, online resources, digital materials, and library management systems."[6] Though these expectations continue to grow and develop, often staff job titles and compensation remain the same. These new requirements may be included under "other duties as they arise" within job descriptions.

The COVID-19 pandemic itself brought about a new set of challenges for staff responsibilities and expectations in regard to supporting users digitally. The processes and workflows that were created during the pandemic have since been adopted as standard procedures and are considered aspects of established staff positions.

A 2008 study conducted at the Bibliothèque Nationale de France examined the impacts of changes regarding digital support and literacy in this library. This study centered the changes that most impacted staff.[7] Unlike most other studies with a similar focus assessing administration and librarian experience, staff were strongly prioritized and considered in this research. Staff members were provided with a seven-day introductory training, and testimonials were taken from those participating.[8] While librarian positions are most often included in big decision-making and training processes, this study allowed the researchers to view the work from the perspective of staff members who may be responsible for the implementation of decisions made by individuals in librarian and library leadership roles.

Digital Libraries and COVID-19
One of the biggest factors considered during this research was the impact of digital initiatives in libraries during the COVID-19 pandemic and the legacy of these impacts in the present. The human impact of the pandemic within academic libraries was seen most vividly when it came to the implementation of the vast number of infrastructure and digital initiative changes in the service of remote learning. Not only did the shift toward entirely digital collections and services promote greater access, but it also helped with the preservation of physical materials by allowing more time and focus for restoration, with less frequent hands-on interactions with users. However, making these services accessible to more users requires staff to learn skillsets and contribute invisible labor. Many staff were expected to learn how to digitize; triage questions related to digital services; learn additional programs, platforms, and databases; understand the importance and reach of e-resources; and so on.[9]

While the COVID-19 pandemic demanded new processes, a shift to predominantly digital access, and a range of new software and platforms, it also required library staff members to assess and adjust current procedures, rules, and operations that have been staples in academic libraries for many years.[10] Within the scope of creating new and changing existing operations, overall funding was also cut, and library staff members were required and expected to become even more creative in meeting user needs. Many of these newly implemented processes, procedures, journal subscriptions, and services continue to be prominent services offered through academic libraries today, several years after the start of the pandemic. Yet, the assessment of the evolution in staff skillsets and job responsibilities added to staff member roles remains unaddressed and often uncompensated.

DATA COLLECTION – CALIFORNIA/UCSD-SPECIFIC

California State Library Data
When trying to understand trends in the data before, during, and after the COVID-19 pandemic, the researchers began with a picture of publicly available information about trends in electronic materials in California during this period. Although there may be differences in these trends between public and academic libraries, it was found during research that academic data are less readily available to the public. This may be for a variety of reasons, including differences in collection patterns, shifts in funding, and privacy concerns. This set of data was collected from the California State Library and is collected every year through the public library survey disseminated across the state.[11] In the recent changing political context, these datasets have been moved.

The researchers used the metric of expenditures on electronic media to attempt to illustrate the trends in expanding reliance on electronic media. Utilizing information from 2018 to 2023, the researchers analyzed the expenditures on electronic materials versus print materials. The information indicated an acute increase in expenditures on electronic materials around 2020–2021 at the height of the COVID-19 epidemic, remote learning, and lockdowns, with the increase in spending continuing in the following years. At the same time, it reflected an acute decrease in expenditures on print materials during the 2020–2021 period, with spending increasing in the following years but continuing at a lower rate than spending on electronic materials. During the observed period, reported expenditures on electronic materials increased from 32% to 58% of total collection spending. Figure 1 displays the data collected regarding investment in electronic versus print materials over a five-year period. It will be interesting to revisit these datasets considering current funding fluctuations at the federal level for contrast.

Figure 1. Investment in electronic vs. print materials ([Tableau Dashboard](#)).
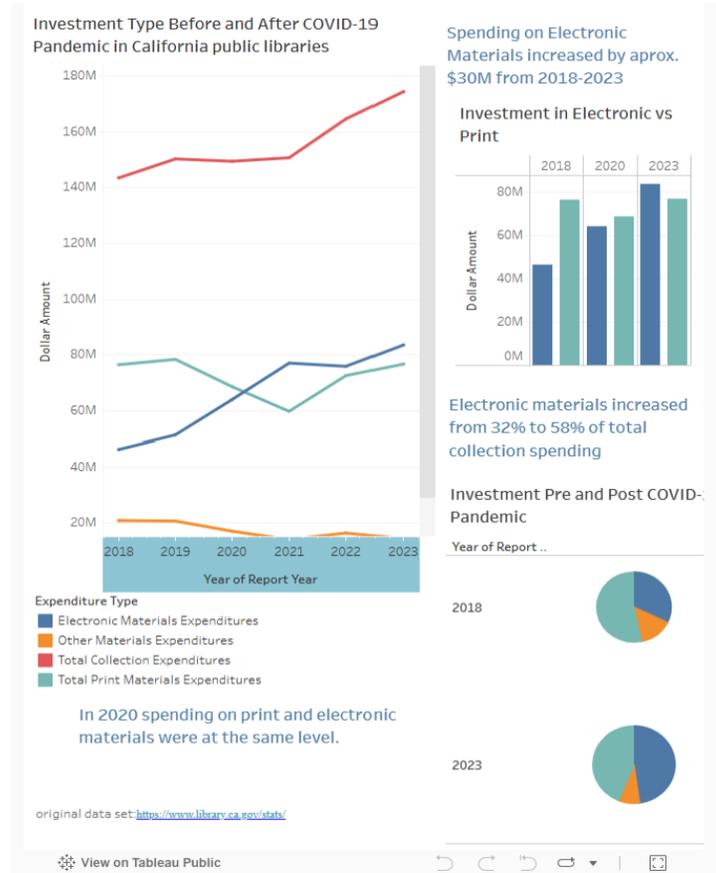
UCSD/SLA (Spaces, Lending, and Access Program) Data

A similar dynamic was observed in the available UCSD data. Because of the expansive scope of the digital materials and work done at the UCSD library, the researchers chose four metrics that showed an increased investment in electronic media. The four metrics included the number of items processed through electronic reserves, streaming media requests, local scanning, and the amount of the copyright clearance budget. Electronic reserves, streaming media, and local scanning are services that make physical materials available electronically at no cost to the user. In the case of streaming media and electronic reserves, the library acquires licensed material that is then available to all library affiliates. Purchasing additional licensed material expands the collection and requires additional staff work including negotiation, logistical management, and troubleshooting as the collection expands. In the case of reserves, localized scanning and copyright permission clearance increased access to digital resources but required the adoption of additional service models and staff work.

The UCSD data accessed for this study included the budget for copyright permission clearance and use of document delivery services. These services saw a spike during the 2020–2021 timeframe, which then slowly declined. The number of requests remained elevated to approximately twice the level of demand before the pandemic. Figure 2 displays the number of electronic materials processed and made accessible over a six-year period. An increased investment in supporting access to electronic materials through fluctuation in the copyright clearance budget was observed. In the period of 2017 to 2024, displayed visually in Figure 3, the spending on copyright clearance to make materials available digitally more than doubled. Copyright clearance is only used in cases

where electronic material is not available to be licensed and is a complimentary service to support the overall initiative of expanding access to digital materials. Overall, these services increase affordability for students.

Figure 2. Number of specialized circulation materials accessible electronically from 2018 to 2024.
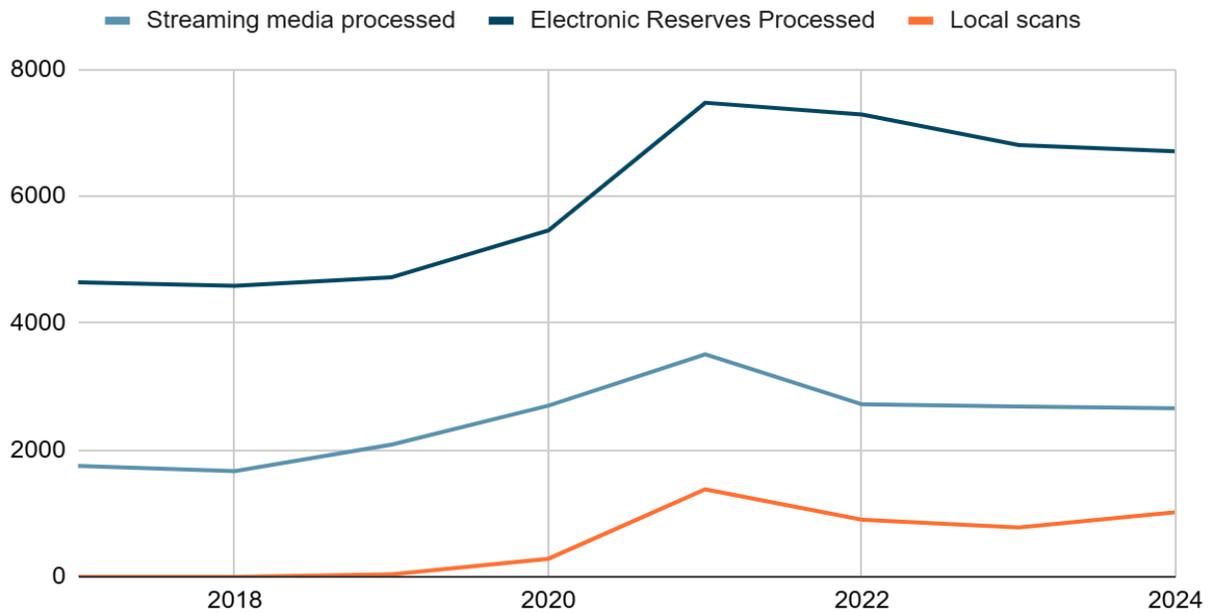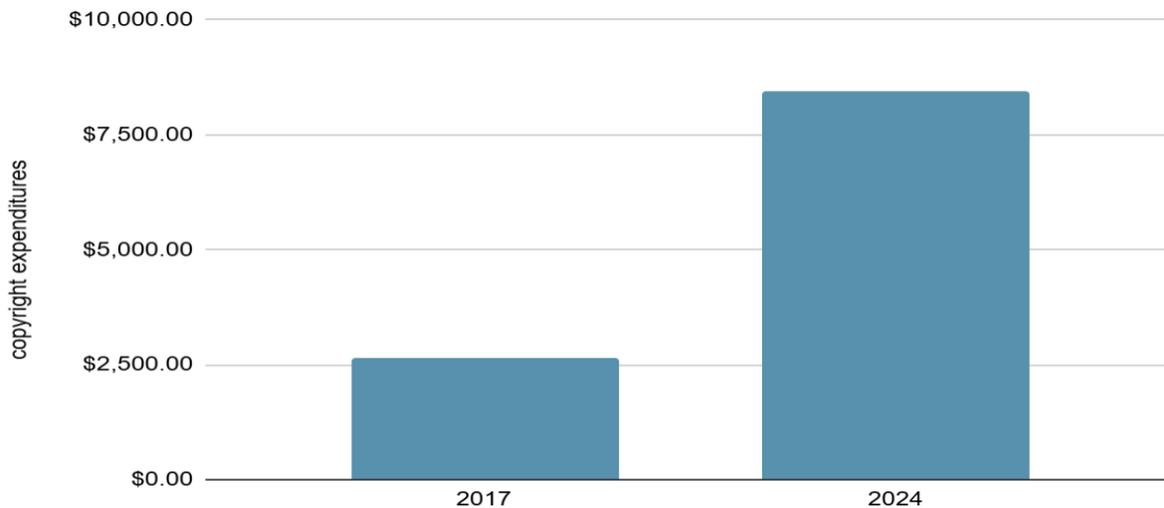

Figure 3. Copyright expenditures in 2017 vs. 2024.

METHODOLOGY

To better understand the depth of the impact of digital initiatives on staff at UCSD's Geisel and WongAvery libraries, the researchers designed and executed a three-phase data collection research project. This method allowed data to be collected from staff members at both libraries in

a variety of formats to receive the highest number of responses and engagement. The three phases included a diary study, personal interviews, and a survey and addressed both the anonymity and comfortability of staff members who elected to participate. This research offered additional information about the type and scope of work completed on a daily basis, the new skills being acquired, and the impact of the additional tasks on team members. Once the three phases were decided, the researchers submitted the project to the Office of Administration (OIA) for institutional review board (IRB) approval and looped in library program management regarding the recruitment of participants.

Phase One: Diary Study
For this phase, the researchers spoke to the assessment specialist, Roxy Haji, at the Geisel Library for guidance on how best to collect data about the day-to-day functions and tasks that staff members complete in relation to digital initiatives. It was then decided that a diary study would work best to gather qualitative data over a specified period of time while ensuring that participants remained anonymous. Diary studies have been defined most often as a qualitative research method that is "used to collect insights about user behaviors, activities, and experiences over time and in context."[12] This diary study ran for a three-week period in July 2024 during UCSD's summer session.

Qualtrics, a survey design platform supported by UCSD that allows for results analysis, was selected for use to create a form that could be completed by participants each workday. The researchers clarified the definitions of both *specialized tasks* and *digital initiatives* to better inform participants prior to the start of the diary study. The researchers defined *specialized tasks* as "tasks that relate to any and all digital initiatives and services, including working with digital materials, updating library webpages, digital communications, providing support for digital materials directly with users, etc." For this diary study, the following definition was provided for *digital initiatives*: "any and all tasks, or processes that relate to making materials and services available digitally, or any general digital processes within the library."

The form for the diary study consisted of the following four questions and allowed for multiple lines of text in response:

- What specialized task(s) have you completed today?
- What amount of work did you dedicate to this task(s) today?
- How is this task(s) connected to digital initiatives?
- How do you feel about completing this task and its connection to digital initiatives?

Phase Two: Interviews
An informal conversational format phase was also included for participants who were interested in sharing their experiences and thoughts verbally. An invitation to schedule a 15-minute interview with one of the researchers was sent out to all non-librarian staff members at both Geisel and WongAvery libraries. Participants had the option to meet in person or by video conference. Participants were encouraged to provide as much or as little information as they felt comfortable and were provided with no direction regarding responses. Each participant was asked the following questions:

- How would you define digital initiatives (no wrong answers)?
- How much time do you dedicate to digital initiatives?
- What new skills have you had to learn to carry out the functions of your job?

- Have your duties changed over time?
- What changes in access and prevalence of digital materials have you noticed before, during, and after the COVID-19 pandemic?

Participants were also encouraged to provide any additional information pertaining to digital initiatives in the library, their experience, or topics they felt were important to this conversation.

Phase Three: Surveys
While the diary study required a longer time commitment and gathered qualitative information about participant experience, the interviews provided a verbal option for staff to reflect on their experiences with the work. The researchers also wanted to ensure that participants had the chance to provide anonymous written information in the form of a digital survey. To create these surveys, Qualtrics was again selected. The survey consisted of six questions written in multiple-choice and short-answer formats, with the option to select multiple answers within the multiple-choice questions. The following questions were asked of each survey participant:

- How would you define digital initiatives?
- Based on the definition you provided above, do you work with digital initiatives?
- What portion of work time do you dedicate to digital initiatives?
- Please mark any of the following tasks that you complete in the course of your job:
    - Respond to electronic inquiries, referrals, and reference requests
    - Direct users to electronic resources
    - Troubleshoot access and use of electronic materials
- Processing materials for electronic access
- Have you seen a shift in the amount of time library staff spent working with digital initiatives before and after COVID-19 lockdowns?
- Please describe any shifts in work you may have noticed.

For the question asking what portion of work time is dedicated to digital initiatives, quarter percentages were provided with a number of hours per week specified as options. The survey was released to participants for a one-week period in September 2024.

RESULTS
Diary Study
The three phases of the research study provided a plethora of information regarding staff experiences with digital initiatives and changing qualifications, in addition to general thoughts and opinions. Each phase painted a picture of the often-invisible labor that makes implementing digital initiatives successful. These results also revealed the vast amount of information to be collected and opportunities to further this research regarding the impact of digital initiatives.

The diary study portion of this research study was sent to all library professionals within the UCSD library system and garnered responses from staff members with library assistant, library professional, manager, and administrative analyst position classifications. Over the three-week period, staff members provided information regarding their daily tasks in connection with digital initiatives. Figure 4 provides a visual representation of the tasks that were completed during the diary study.

Figure 4. Tasks completed during diary study.

- DAMS: Tasks that included a specific mention of the UCSD Library Digital Asset Management System

- Statistics: Tasks focused on reviewing statistics

- Reference: LibAnswers, HelpNow, etc.

- ILL: Interlibrary Loan

- Miscellaneous: website updates, webinars, scheduling, event planning, etc.
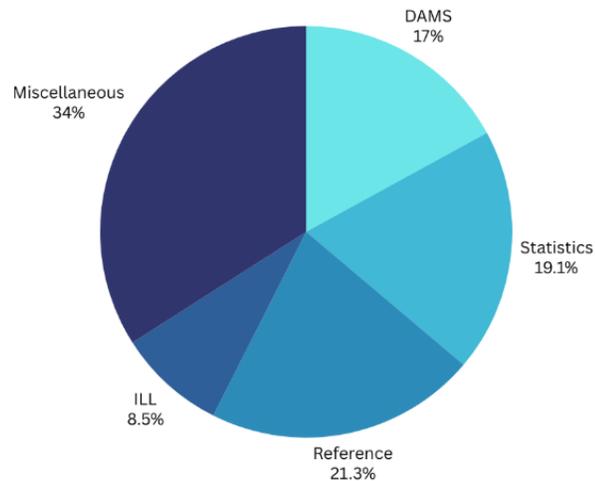
The researchers found that 34% of tasks related to digital initiatives completed during the period of this diary study involved a wide range of tasks, including updating the library website, attending webinars, event planning, and so on. However, many of the tasks completed by staff overall included work with DAMS and responding to or triaging reference-related questions. This diary study also showed that 33% of participants noted spending three to five hours of their workday on tasks related to digital initiatives, while 30% noted that these tasks consumed "most or all of their workday."

The diary study also brought to light the many different interpretations that participants had of the phrase *digital initiatives*, with some staff members providing detailed explanations regarding how their work related to digital initiatives and others including phrases such as "maybe" or "not sure" when asked whether their task was related.

Interviews

The interview portion of this research study included participants from across library departments and position classifications, including management and library assistants. The first question about defining the term *digital initiatives* furthered the discussion of the nuance involved in defining the phrase that stood out in the diary study. A wide range of responses from interview participants were received, including the definitions "anything the library is doing that is expanding or maintaining digital materials, anything that is based on materials online, whether it is maintaining databases and materials and streaming, etc., to making materials available" and "any time there is not an obvious option to ask for something except from a machine. This drives digital initiatives." With so many different interpretations of the phrase *digital initiatives*, the researchers received a broad range of responses and were prompted to further the exploration of the phrase's definition.

As participants were interviewed, the researchers also found that the work being conducted by staff members included skillsets beyond what was originally noted in the job classifications. Staff members spoke about cataloging, negotiating licenses and contracts, troubleshooting, and testing various software and platforms, as well as managing budgetary items. This brought about another key result from the research study, that of the idea of invisible labor.

Staff members noted that "digital material work is invisible" and that "people are good at conceptualizing the work that goes into processing a [physical] book." Another participant noted that "there is an expectation of a much broader skillset as an employee than I've ever experienced in non-digital environments." In addition, there was discussion regarding the expansion of digital initiatives and digital collections and how this expansion is not thought of in the same way as a physical collection expansion in regard to expected labor and skillsets.

Surveys
In the last phase of this research study, an anonymous digital survey was sent out to all library professionals in the UCSD library system. More than 50% of the non-librarian staff members who received the survey link responded. Questions asked in the survey portion were similar to those in the interview phase, and the responses furthered the discussion regarding the definition of digital initiatives.

Participants again responded with a wide range of interpretations, including "online work," "digital initiatives are programs in libraries whose purpose is to provide access to content on digital platforms," and "the incorporation of digital technologies into procedures or projects." When asked if, based on their own definition, the participant worked with digital initiatives, 87% of respondents noted "yes." A multiple-choice question regarding which tasks are completed in the course of a participant's role was also provided. Figure 5 provides further information on the responses received in addition to the choices offered.

Figure 5. Responses received for survey questions regarding digital initiatives tasks completed completed.
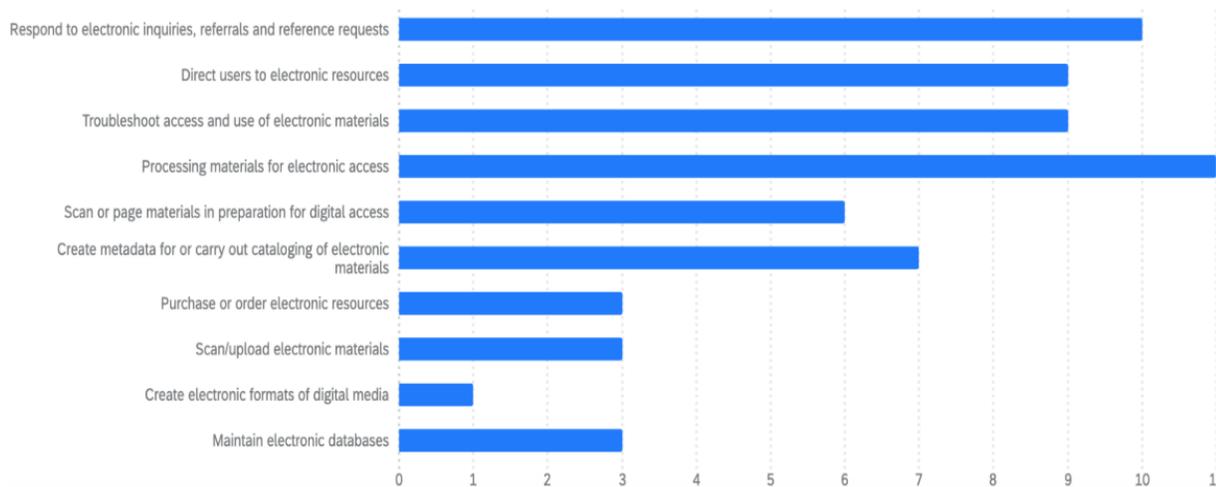
DISCUSSION

Although this research was limited in scope, the researchers attempted to highlight the trends in California toward investment in digital material. The term *digital initiatives* is widely used in libraries to encapsulate many different types of work. Digital initiatives in libraries include special collections and archival work, as well as the process of providing access to licensed material like datasets and access to geographic information system (GIS) software applications. The data that were looked at in the public and academic library spaces suggested that the "digital library" continues to expand. Digital initiatives and digitization are often referred to as a solution to rising

costs and mounting barriers to maintaining physical libraries, but this shift requires human input as well.

As libraries continue to shift toward adopting digital models of service, the question of human impact is central to the field of librarianship. Staff with a variety of educational and professional backgrounds stretch their skills to meet current user needs. This creates a working environment where frontline staff who may not have the professional title of librarian are experts in user needs, troubleshooting, and other specialized skills required to maintain and expand access to digital material. Shifting toward digital preservation, licensing, and other initiatives does not eliminate the additional staff work required. This investigation stemmed from an interest in how individuals are experiencing this shift in their workloads.

Additionally, this work was presented at a conference focused on access services hosted in Madison, Wisconsin, for library workers from across the country. Considering that research in this area is an iterative process, the researchers asked a series of questions to the participants of this session utilizing Menti word cloud, a poll, and a percentage cluster. The word cloud included a wide range of ideas around digital initiatives. The audience highlighted "complicated" as the most selected word, followed by "electronic" and "accessible." The word cloud also included "cloud," "changing," "transitions," "online resources," "digital gap," and "eBook." When asked some of the questions used in the survey regarding time spent on digital initiatives, the conference attendants reported spending between 25% to 75% of their day on this type of work. This offers another data point connecting with the experience of library workers and suggests that more investigation is needed.

With the shift to digital collections, library work changes as well. Electronic collections require care and maintenance in the same way that physical collections require care and maintenance. Although the collection does not take up physical space in the library building, it requires human support and occupies a digital space. This digital space also has a tangible environmental cost; books, articles, and archival materials being made available are stored on servers that require specific environmental conditions and continuous electricity connection. As libraries operate through challenging times such as the global COVID-19 pandemic and environmental emergencies such as wildfires and floods, it is important to accurately assess all resources that go into making digital initiatives possible.

LIMITATIONS

Although the researchers gained insight into the experience of library workers, the following are some of the limitations of this research study. One limitation was that of the sample size for each phase of this research study. Efforts were focused on garnering participation and responses from non-librarian staff colleagues at both Geisel and WongAvery libraries at UCSD, rather than at academic institutions across the state or country. This ultimately led to a smaller sample size for each phase of the research study, which then provided limited results. As more research is pursued on this topic, the researchers aim to collect responses and experiences from a much larger pool of participants from academic institutions both nationally and internationally.

In addition, this research brought up many questions surrounding the definition of *digital initiatives* and what that phrase means to staff members across the library. As more research on this topic is pursued, the researchers would suggest confirming and providing a definition of this phrase prior to collecting responses from participants. This would allow participants to reflect on

their experiences, skillsets, and ideas from the perspective of the defined meaning, rather than focusing on what *digital initiatives* means to them specifically.

This research study is only the start of the conversation surrounding the human impact of digital initiatives in a post-COVID-19 world. This study touched the surface of topics such as invisible labor, required staff skillsets and responsibilities, expectations going forward, and so on. The researchers' hope is that this conversation prompts further research into staff experiences and engagement with digital initiatives and how to use information from staff to better inform library structures, position titles and requirements, and the ways in which users are served.

CONCLUSIONS

Digital initiatives and digitization are often referred to as a solution to rising costs, constraints and mounting barriers to maintaining physical libraries.[13] However, there are tangible costs associated with this shift in digital work. This study aimed to be an initial examination of the impact of increased digital collections on non-librarian staff members. As digital offerings increase, there must also be consideration for the amount of staff work that goes into establishing, maintaining, and providing access to digital collections, and it is important to acknowledge the additional tasks required in establishing a digital workflow.

Every time a user clicks the "get now" function requesting a scan, interlibrary loan, or purchase of materials, there are multiple humans affected by that request. There is a great amount of expertise among staff members who may not have a librarian designation in their title. Working at the front desk, troubleshooting online for a user, or fixing problems with a database requires skill-building often learned on the job. The responses collected suggested that, to successfully continue this work of digital initiatives, work can be done in collaboration with library communities to ensure staff are appropriately trained, equipped, and compensated to implement digital initiatives for users.

The hope is that this is only a first look at the human impact of expanding digital collections in libraries. The LIS landscape is rapidly changing in the new political and budgetary landscape. Leveraging the expertise of staff may be one strategy to address the continuing challenges. There is room to expand this work, and more research is needed to better understand the scope of staff work that make digital collections successful. Potential areas of study include documenting the workflows and strategies involved in creating and maintaining digital libraries or focusing on the division of tasks based on degree type and the division between the services currently available through libraries and the unmet needs of users. The researchers hope that continued study highlighting the invisible work and support being done by library professionals will lead to increased access for users in the age of the digital library.

ENDNOTES

[1] This paper is based on research presented at the University of Wisconsin, Madison "Back in Circulation" conference in October 2024.

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