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Emerging Technologies and Spaces in Access Services

David McCaslin and Katherine Furlong

EMERGING TECHNOLOGIES and alternative uses of space has increased opportunities for access services departments to provide better resources and services to their users. Libraries who have recognized how technology has become entwined in people's lives have proven more successful in meeting their patrons' digital needs. The impact of the COVID-19 pandemic on access services departments demonstrated that those who embraced forward thinking were better positioned to address the needs required of a physical distancing environment. Moving forward, an access services unit that is agile and recognizes the evolving nature of technology and spaces will be better positioned to meet the next unforeseen challenge. Empowering employees to make decisions, promoting experimentation, and being willing to try new ideas as part of a culture that sees failure as a learning opportunity are all keys to staff agility.

CIRCULATING TECHNOLOGY

Nearly two decades of laptop lending have made laptops the foundation of circulating technology.¹ Offering laptops for checkout provides users the opportunity to work in comfort or mobile freedom from a computer lab. However, the circulation of laptops presents access services staff with several issues to address. The circulation staff must define a policy for laptop lending to protect the library and inform users of their responsibilities when borrowing a laptop. This includes the length of a loan period, whether the laptop can leave the building, and what is permissible use of a library laptop. Staff should explain the responsibility for the equipment users assume while using a laptop at the time of a checkout. Though laptops have consistently declined in price since their introduction, the cost is still higher than the typical lost or damaged book.

A longer loan period and freedom to leave the library could increase the chances of damage or theft. Yet these risks must be weighed against a desire to give users opportunities with the laptops. Server restrictions may protect a library resource from possible theft or damage, but they will also discourage users from benefiting from the service or device. A balance must be struck to ensure security for the laptop and maximize use by the patron.

The library's user population and the number of available laptops will play a role in determining an ideal loan period. The integrated library system (ILS) may also have prescribed loan period parameters that must be used in determining a loan period. Offering a shorter loan period is a good practice if a library has a high user population and few laptops to lend. This will assure reasonable availability for users. A longer loan period is generally an indication that the laptop may be used outside the library; shorter loan periods may not offer the borrower sufficient time to leave the library facility. Some libraries with fewer than a 24-hour loan period do not allow circulating laptops to leave the building. Libraries that offer a loan period of 24 hours or more usually allow users to leave the building with these materials.

Though the checkout process for a laptop will resemble that of a book's, it could include a written authorization form that allows users to read the rules related to use of the laptop and sign, accepting those responsibilities. A written acknowledgement would provide possible recourse for the library if a laptop is damaged or altered when checked out to a patron. It may be prudent to consult with the library's general counsel when drafting such authorization forms. Before checkout and upon return, staff should inspect the laptop to confirm it is in good condition and proper working order. This information can also be noted on the authorization form, which again verifies any damage or alterations that occurred while the laptop was checked out.

The circulation of laptops must include collaboration with the library or campus technology staff. Procedures should be developed to address the cleaning, updating, housing, and charging and replacement cycle for the laptops. In addition, their assistance would be needed to provide troubleshooting support for issues that might occur with a laptop. Organizational structures will determine lines of responsibility and budget for laptop care. Clear understanding, documentation, and delineation of responsibilities are, as ever, the foundation of efficient workflows.

Circulating laptops can also play a role in meeting the needs of a diverse patron population. Consider partnering with your office of accessibility to proactively identify settings, software and technologies that might best support a universal design for learning for patrons of all ability statuses. In addition, be mindful that equity should be considered when circulating technology.² Programs such as UC Berkeley's Student Technology Equity Program (STEP) are not run through the library but work in concert with more traditional library lending activities to ensure just-in-time access to necessary equipment.³

Circulating only laptops may not satisfy users' needs. Libraries should be prepared to offer laptop accessories to patrons. For many years, libraries have circulated non-book items, such as headphones, dry-erase markers, and Ethernet cables. Libraries should be willing to circulate computer mice and battery chargers for use with laptops in addition to

headphones and Ethernet cables. The circulation of these accessories can mirror the process for laptop checkout, with a similar loan period and a written authorization form.

Laptop lending is a large component of non-book lending for libraries, but other electronic hardware can be circulated to library patrons. Patrons now expect more from libraries than just providing content through print and digital resources; they expect that libraries will also offer tools for creating content and mobile devices that store content. The circulation of these types of hardware can mirror the process developed for laptop circulation, but each offers unique challenges and requires special attention.

Digital cameras for still photography or high-quality video recording have become popular for patrons to check out to produce visual projects or document research. This type of hardware can be sensitive about lenses and settings. Staff should be trained on the basic handling and operation of circulating camera models and share this knowledge with users. In addition, libraries should clarify if they offer memory cards or expect patrons to provide their own memory cards. Digital cameras usually have a small internal memory capacity. Staff must review this space and erase files to ensure privacy from one user to the next. It can be difficult for staff to master the myriad options of digital photographic equipment; access to expert staff and/or supporting documentation and online tutorials can help to meet this knowledge gap for patrons. Setting expectations on the level of support available to patrons is an important element during the checkout process. Additional equipment, such as tripods, booms, lighting, and green screens can also be considered for circulation.

Gaming systems, such as Sony's Playstation and Microsoft's Xbox have grown popular with libraries that seek to engage their young users with technology that promotes problem solving, creative thinking, and teamwork.⁴ The use and circulation for gaming systems can vary between libraries depending on space limitations and available funds. Libraries with adequate space could furnish designated space, gaming systems, monitors, and furniture for use within libraries. Circulation staff could

still be called upon to administer and schedule the gaming space as well as circulate gaming units and individual games. For libraries unable to offer this type of space, staff may decide to circulate gaming systems for use outside of the library. Like laptops and cameras, users and staff must treat this type of hardware with care to ensure longevity of use.

Digital projectors are a great resource to offer patrons, who may use them for class presentations or to display a popular film. In a sense, a digital projector can be viewed as a computer accessory and treated as such. However, the sheer size and cost of this type of equipment warrant special care. Training on how to properly operate the projector may be a precondition to checking out the device.

Tablet computers (tablets) combine high mobility and easy-to-use functionality with the strong productivity capabilities of a laptop computer to form a popular electronic device. Apple's iPad, Google's Nexus, and Samsung's Galaxy are examples of a highly mobile computer with a touchscreen and stylus in place of a static keyboard. The use of these devices can alternate among entertainment options like reading books, watching movies, or playing games and among production tasks like statistical manipulation, presentation creation, or academic research. Due to their user-friendly interfaces, they have grown in popularity and may become highly requested by library patron populations. Libraries that invest in tablet hardware must recognize the risk of tablets becoming outdated by newer models. Competition among tablet manufacturers and advancement of technology have ensured that new tablets could be substantially superior to models produced a year or two previously. If libraries choose to circulate tablets, policies should be in place to address the prospect of replacing tablets with newer models. Library budgets could limit the possibility of refreshing the collection with newer tablets or the frequency with which this could be done. However, these limitations could affect the circulation rate or popularity of the devices for patrons.

The circulation of tablets could emulate the laptop process, with some exceptions. Library staff must decide how the tablet will be used and can shape how it is used by adding software applications (apps) to it. Using

Apple's iPad as an example, apps are added through Apple's "App Store" website. The apps range from games to office production to reference to entertainment. Though some apps are free, others are not, and the cost of the apps should be considered when budgeting for tablet circulation. Upon checkout, users should be informed of the restrictions on use on the tablet. When the device is returned, staff should inspect the tablet to confirm it is in good working order and check for any software or app updates. Many software developers are constantly improving their apps to add new features or better operability. Staff must be attentive when inspecting tablets and update apps when needed.

To offer a successful circulation program for any nontraditional item, such as electronic devices, circulation staff should be thoroughly trained how to operate the hardware and provide troubleshooting assistance when needed. Developing a wiki or creating easily accessible documentation will provide staff with a go-to reference in times of need. In addition, library policies must clearly define the loan period, if the item is reservable, and inform patrons of rules on what use of the device is acceptable and unacceptable. Procedures must be formed to address issues that might arise. Circulation staff are in a unique position to provide education to patrons on proper operation and responsibilities for use on the hardware as well as report anecdotal feedback to the library administration on lessons learned from providing the service. Finally, maintaining flexibility is important to accommodate unforeseen circumstances that may arise. For instance, in response to the shift to remote learning due to the COVID-19 pandemic, libraries acquired and circulated WiFi hotspots to their users.

PATRON DRIVEN ACCESS SERVICES _____

Technology has improved circulation processes since the days of staff waiting for books to be brought to the desk and stamped with the due date. Integrated library systems (ILSs) have provided for a smooth pro-

cess with barcodes and automated due dates generated, but staff may still be required to complete the process. With self-check machines and Radio Frequency ID (RFID) tags, the time required for staff to check out books to patrons has decreased; in fact, staff time may no longer be needed. RFID tracking technology can enhance a variety of asset management tasks, from circulation to shelving and inventory. For libraries with few staff members performing many tasks, the labor costs and staff time saved from performing routine circulation tasks could be valuable. Self-check machines also provide a benefit of providing physical distancing between the user and staff, which can be important during periods like the recent COVID-19 pandemic.

Self-check machines are not a recent development, but technology has improved their performance and reliability.⁵ In the past, dependability was a concern for libraries where self-check machines received high use. If a library changed its ILS, there might be compatibility issues between a self-check system and the new integrated library system. Some self-check machines with card swipe technology required ID cards in good condition. Students, who use their ID cards for dormitory access and meal purchases as well as for the library, could have damaged ID cards. Some self-check machines require a book to be placed in a specific spot or angled so a barcode reader can scan the item's barcode. These conditions require patience from the patron.

Due to advances in technology⁶ and competition among vendors, self-check machines have become more dependable and easier to use. Investigating and testing self-check machines is an important key to possible implementation of the service to a library. A library should choose self-check machines that meet the needs of its patron population and provide security for the library's collection. An unreliable self-check machine could result in missing or stolen materials, leading to staff needing to spend time conducting shelf searches or purchasing replacement copies and to patron frustration and dissatisfaction.

The improved performance of self-check machines could partially be due to increased use of RFID chips in library books and ID cards. Like self-check machines, RFID is not new to libraries. The appeal of RFID is rooted in the benefits it can deliver to circulation and inventory maintenance. For manual circulation, using books with RFID tags could reduce repetitive motions and prevent occupational injuries, such as carpal tunnel syndrome for library staff. Self-check machines with RFID-reading technology are easier to use and less intimidating for patrons, who need only place the books and ID card within range of the RFID reader. For collection maintenance, RFID offers library staff the ability to examine and correct collection location without having to touch multiple items. However, cost has been a major obstacle to integrating RFID into more libraries. RFID technology has declined in cost in the past decade but remains an issue for libraries that might consider retroactively tagging their collections and installing RFID hardware. Staff working with RFID must also be successfully trained with the technology.⁷ RFID technology has meant that in some recent library renovations, circulation desks are eliminated, allowing staff to be redeployed to work on higher level tasks.⁸

The COVID-19 pandemic has created a sharp uptick in the number of libraries offering some sort of delivery or curbside service. Just as customers at grocery stores and big box retailers expect pickup and delivery of items, library patrons desire safety and convenience in touchless self-service. These services are often made possible through existing ILS features, such as holds and messages, and can be customized to meet local needs. These services are proving popular and are likely to remain in demand when the pandemic abates.

STUDENT WORKSTATIONS _____

A mainstay in academic libraries in the twenty-first century is student access to computing. Many libraries designate space for public computer workstations to be grouped together in a computer lab; others disperse

public workstations throughout the library building. Some libraries provide a combination of both arrangements. Given the public space these workstations often occupy, access services staff are often called upon to monitor and possibly troubleshoot problems that might occur with public computers. Access services staff should be trained to triage technical problems and have procedures in place to refer difficult issues to the appropriate staff.

Not all student users own a computer or have access to a high-speed internet connection, so these workstations fill a need for these patrons. In addition, these workstations may offer software applications otherwise unavailable to users. Student computing spaces could also allow small groups of users to work collaboratively on assignments or projects. All these factors could lead to crowded computer labs or long waits for individual workstations. Access services staff should rely on their public service training to manage problems that might arise with open computing spaces. The staff should also be trained to address computer use that may be offensive to other patrons. For example, a patron who uses a public computer to view pornographic or potentially insensitive images can upset others in view of the computer. Access services staff must meet with those individuals and explain the acceptable use of public computers within that library, assuming the library has such a policy. Reserving computers can be considered, and software to manage reservations, such as Springshare's LibCal platform, can efficiently handle the process with a minimum of staff support. The COVID-19 pandemic has increased the need for remote computing environments or "virtual labs." Application virtualization is the ability to run a software application on a desktop, laptop, tablet, or smartphone that would normally only be available on a computer in the library. Virtualized applications can be available anytime and anywhere, and they eliminate device compatibility issues. Virtual labs can make specialized software available to patrons across campus or using a virtual private network (VPN), around the world. Even though the creation and maintenance of virtual labs is not necessarily an access services function, access services workers should be aware of the trend

because virtualized applications may impact the deployment of and demand for circulating and installed technologies.

MERGED SERVICE POINTS/NEW AND ALTERNATIVE SERVICE POINTS

Collaborative Spaces

Collaborative Spaces (also called learning commons, information commons, knowledge commons, or reference studio, among other names) is a space that combines traditional reference and research services with new elements supporting emerging technologies or student services in a larger and more integrated environment. Some spaces include writing centers, information technology help desks, math or quantitative learning support centers, and a variety of other student support services. In the best models, students can experience the support and expertise of library, computing, media, and other professionals all in one combined learning space. The concept emerged in the early 1990s and has quickly become a key design element of new and renovated academic library buildings.⁹

Creating a collaborative space can represent a major capital expense and require many dedicated staff. The Tombros and McWhirter Knowledge Commons at the Pennsylvania State University (Penn State), for example, was a multi-year building project and includes video production areas, living room areas, podcasting facilities, green “living” walls, service kiosks, and integrated help desk areas, all carved out of prime first floor space in the historic library. The knowledge commons, a collaboration between Penn State’s University Libraries and Information Technology Services, is envisioned as a student-centered space featuring areas for relaxation and collaboration and full of the just-in-time help needed for academic research and multimedia creation.¹⁰

Sometimes, a smaller-scale collaborative spaces can be created through more informal partnerships and by repurposing existing staff and space.

Often legacy library services or areas where collections are shrinking, such as print periodicals or reference collections can be repurposed no matter how the space is created, the goal of student-centered, integrated services remains. Whether the space is large or small, the same issues are at stake for providing fluid services in a library that respects and makes the most of print and digital environments.

Though the collaborative space model often centers around services that have traditionally been part of reference's milieu, access services often gets pulled into the mix. From integrated circulation and reference service desks to building maintenance issues, serving patrons in a collaborative fashion brings its own challenges. Whatever the interaction within the model is called, e.g. a consultation, a drop in, or a reference interview, providing the right support for students and faculty is key. Properly staffing the support desks and clearly communicating available levels of support can help to manage student and staff expectations and experiences. Providing this staffing requires clear reporting lines, defined service goals, and flexible referral and tracking systems.

Circulation of a variety of equipment to support multimedia creation is often one of the services offered in a learning commons environment. From digital video production cameras to music keyboards and FireWire drives, the array of devices in circulation can quickly become overwhelming. Some low-tech items, like headphone splitters, seemingly require little or no staff intervention; other items require specialized training and software to operate. Though access services staff may not need to be experts in using the equipment, their expertise in policymaking and in labeling and circulating items will enhance any program. Most ILS systems can be used in robust ways to display messages, track inventory, book items, and collect statistics. Consider customizing the records for each piece of equipment so a pop-up message appears at checkout and check-in reminding staff to look for all the various pieces and parts. Custom hang tags and labels can also assist in tracking each item. Include a photograph on each hang tag showing what should be contained in each case and information for patrons on where to find assistance or the

online manuals for each piece of equipment. Adequate space for secure equipment storage and battery charging can be a challenge but needs to be incorporated into your service area.

If your collaboration space includes large-format-poster printing or the 3D printers, access services may also be called upon to coordinate cost-recovery measures.¹¹ Tracking payment for print jobs is a thankless task but one made easier by a variety of print management solutions on the market, such as Pharos. One should be aware of what systems may be available on your campus and consider a system that directly interfaces with your campus enterprise system for ease of tracking and billing and to help provide a unified user experience across the institution.

In some collaboration spaces, circulation and access functionalities are being provided by self-serve kiosks and high-tech and low-tech vending machines. Automated laptop-vending kiosks could let users obtain laptops or tablet computers as intuitively as using an ATM at a bank. When the patron swipes an ID card or credit card, the kiosk authenticates the patron, tracks circulation, and imposes any necessary fees. Once an item is returned, the kiosk can erase data on the device and ensure the machine is charged and ready for the next patron. Other vending machines serve up everything from office supplies to books and DVDs.¹²

Innovation/Entrepreneurial/Maker Spaces

Related to learning commons and group study spaces, innovation spaces in libraries are flexible, and modular environments where the social learning needs of patrons can be met. In some ways, innovation spaces are a natural outgrowth of the learning commons trend and research into constructivist learning theory. Constructivist theory holds that learning occurs when students have to create or construct meaning for themselves.¹³ Collaborative spaces allow students free rein to work with others to learn as part of an active, social process. From rather extreme experiments in library innovation, such as Harvard Uni-

versity's 2012 LABrary pop-up space to more permanent spaces, such as the University of West Florida's Great Good Place or Susquehanna University's Caruso Innovation and Mentoring Center. These spaces can take many forms to meet local needs.¹⁴ Though many well-publicized collaborative spaces are large undertakings, some needs can be met on a smaller scale by outfitting nooks within the library for collaborative teamwork.

The design of the collaborative space is crucial, and the design process should involve campus stakeholders, including faculty, students, librarians, technicians, and custodial personnel (after all, if the innovation space is not well maintained, no one will want to stay). Consider a variety of low-tech and high-tech solutions for sparking discussion and creativity. A whiteboard and alternating current (AC) outlets for charging personal devices may be more crucial to success than the latest projection equipment. Some students want a degree of privacy during their collaboration, and moveable partitions and flexible seating options can help to meet this need. Avoid using single-purpose furnishings that cannot be reused in the future.

The common thread linking innovation spaces, large and small, is a sense of community involvement in what sociologist Ray Oldenburg termed a "third place" (with the first and second places being home and work, respectively).¹⁵ Collaborative "third" spaces celebrate informal public gathering places that support the communal production and sharing of knowledge and resources in a creative, flexible environment. Ubiquitous wireless connectivity, a wide array of digital multimedia creation tools, and human-centered furnishings coalesce into a "collabratory" for constructivist learning.

Other spaces that have been growing in academic libraries include relaxation zones, quiet zones, campus "living rooms" and gaming zones. These, combined with other communal spaces in libraries offer many outreach and programming possibilities, and the open nature of the space echoes the inter-disciplinary and cross-disciplinary aspects of the work that can happen there.

Partnership Service Strategies

Managing learning commons, collaborative spaces, and shared service points is not easy and often not exclusively under the library's purview. Models for service in partnered spaces vary based on the structure and philosophy of organization. Collaborative management, flexibility, and clear communication are keys to success.¹⁶ This work might be undertaken as part of a larger campus or building plan. On most campuses, if libraries don't have a plan for their spaces, others may develop their own ideas about how to use under-utilized real estate.

Most learning commons and communal spaces are, in some way, shared spaces within the library. Space is often the most valuable asset on a college or university campus, and if the library is providing space for non-library departments, then the guest relationship should be clearly delineated. Agreements with outside departments may be formal or informal, but a memorandum of understanding (MOU) outlining expectations and providing a framework for partnership is a vital tool for avoiding conflict. Clearly outline items for which the library is responsible (power, coordinating access, etc.) and items the guest department must provide (e.g., staffing and training, office supplies, specialized equipment). You don't want service in the shared area to break down because of disputes over trivial matters like changing (or paying for) batteries or toner cartridges. The best MOUs are designed to allow for flexibility and evolution, and any agreement will need to be reviewed on a regular basis to ensure it remains in line with current needs and supports best practices in service delivery. The process of crafting and revising an MOU can also help to defuse misunderstandings that may arise when differing organizational cultures are brought together in a shared service environment. Addressing these organizational differences directly can empower staff to move beyond seeing differences as problems and into a space where differences can be used to provide the best possible service to the community.

Consider creating an advisory stakeholder group to ensure clear communication and foster a true sense of collaborative decision making for

the shared space. Partner departments in the learning commons should be taken into consideration during any library-specific training. If a service is offered in the library, then not only should service providers be aware of library policies in general, especially policies surrounding patron confidentiality and copyright, but the staff providing the service should also be included in crucial activities such as the library disaster response plan. Formalizing shared training expectations in the MOU can help to ease the process. In addition to staff stakeholders, do not forget the importance of working with student government, student advisory groups, and administrators charged with ensuring diversity, equity, and inclusion (DEI) when planning and maintaining shared spaces.

If your shared service point combines only library departments, such as a consolidated reference and circulation desk, something like an internal memorandum of understanding should still be crafted between departments. Culture and work expectations can vary between reference and circulation staff even in a small library, and while consolidating service points might make perfect sense from the patron's point of view, the day-to-day operating details will still need to be considered, mutually agreed upon, and consistently reviewed.

One of the most compelling arguments for a single library service point is that it alleviates any uncertainty on the part of the patron. Patrons no longer need to figure out which desk to approach or whether their question is important enough to “bother” a reference librarian. All issues can be brought to one place for service. Public services staff who are appropriately cross-trained can gain confidence and, hopefully, increased job satisfaction through a more varied skill set.

Ultimately, the success of any shared service point depends upon the training, talents, attitude, and knowledge of the workers. Provide (and budget for) continuous training and foster an environment that encourages staff at all levels to try new technologies and experiment with new services and ideas. It's not easy sometimes to determine the difference between a tech problem, an information problem, and a circulation problem, and desk personnel must often multitask or find the right person for

a job. Establish and follow a robust workflow/referral/problem-tracking and resolution system. There are a variety of high-tech and low-tech tools available to help with tracking. Use the data from your tracking system to analyze staffing and use patterns. But don't rely on quantitative data alone in making decisions; talk to the various desk workers, as well as students and researchers using the space, to ensure that needs are being met and resources are adequately distributed. The best decisions are made with quantitative and qualitative data, providing a robust picture of what's happening within your organization. Once you achieve that clear picture, you can adjust services as necessary. More information on data-driven decision making and survey methodologies can be found in Chapter 10.

The sustainability of shared spaces relies upon the need to update and transform our services constantly and consistently. Libraries are not static entities but evolving organizations full of trained critical thinkers. A staff member with a strong service orientation who is dedicated to finding answers will often outperform those personnel with extremely strong technical skills. As always seems to be the case, the quality of the personal interaction is key to any successful library transaction.

NOTES

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