Evaluating the Single Service Point Using the Person-Environment-Occupation Model

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abstract: An academic library's single service point, where users can get answers and help with their library needs in one place, is often the first and most popular place used by students. Studies assessing desk design are rare but needed to help guide planning for renovation or service model change. This study investigated an academic library's service point and identified major themes related to its physical and social environments, staff, and activities and tasks. The study used an ethnographic methodology, in which the investigator closely observed the library staff and users. The study framework was based on the Person-Environment-Occupation Model, which explores how occupational performance is shaped by the interaction between a person, environment, and occupation. The findings revealed themes of patron interactions, physical relationships to the furniture, socializing, and arrangements that may inform choices about service point design to improve staff satisfaction and efficiency.

Introduction

The primary service point for circulation and reference—that is, the main place where students get directions, technology troubleshooting, and circulation and light reference help—is often the busiest and most visible service area in an academic library. Staff at this service point may be the first and only human contact for library users who want assistance with their teaching and learning, research, or personal needs. The design of this service point, including the physical and social environments and the workflows embedded in them, can make a difference in how library users and staff relate to one another. Service points must accommodate a wide range of library staff and patrons with diverse physical and cognitive needs, skills, and behaviors. Un-

derstanding and improving the environmental fit among the staff, the users, and their work thus takes on great importance for improving library services overall.

James Madison University (JMU) is a large, public, master's comprehensive university in Harrisonburg, Virginia. JMU aspires to be "the model of the engaged university: engaged with ideas and the world." JMU Libraries serves a campus community of approximately 24,000, of whom 20,000 are primarily residential and traditional undergraduate students. The JMU Libraries include two main facilities, Carrier Library and Rose Library. These buildings are two of the most popular on campus, with a combined total gate count of approximately 1.6 million visits per year.

Carrier Library historically supported three primary service points, for circulation, reference, and technology troubleshooting. Like many service points designed in the 1980s, the circulation desk was a long, deep, built-in structure about 29 inches tall. It could accommodate up to four staff at a time, with ample counter space and storage. Workspaces behind the desk for circulation functions, including reserves and holds, lost and found, virtual reference, student training, and clerical work, were visible to the public. The desk, often referred to as "the barge" by staff, presented a physical barrier to students and other library users needing help, while always exposing staff to view (see Figure 1). The reference desk was adjacent to the circulation desk, and the technology desk stood across the lobby at a small table often misconstrued as a public workstation.

In 2016, JMU Libraries combined the primary reference, circulation, and technology desks into a single service point. This merger occurred in tandem with a libraries-wide reorganization that brought together disparate access services into one unified department and prompted a renovation to the circulation area. The libraries enclosed working spaces and created a significantly smaller service point for all information triage work. The resulting service point consisted of two tables at counter height separated from the staff working area by a solid wall (see Figure 2).

The renovation was deliberately minimal and used inexpensive furniture. JMU Libraries wanted to experiment with an architecture radically different from the previous, more traditional circulation desk. The tall tables were chosen based on recommendations in the literature for improving approachability. Initial staff feedback about the new service point was largely unfavorable.

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The purpose of this study was to assess the new service point in a way that could inform short- and long-term improvements. The study used a short series of observations and staff interviews at key times, a method called compressed ethnographic methodology.[1] These observations and interviews were based on the primary theoretical frame of the Person-Environment-Occupation (PEO) Model devised by Mary Law, Barbara Cooper, Susan Strong, and Debra Stewart.[2] The study goals were to identify perceived areas of strength and weakness in the current design of the service point and to recommend changes to improve staff satisfaction and efficiency. Two research questions informed these areas of focus:

- How does the design of the service point enable or constrain occupational achievement of staff and student workers in Carrier Library?
- What aspects of the service point design should be retained or altered to support improved occupational achievement?

Figure 1. Carrier Library's original 1980s circulation desk, sometimes called "the barge," at James Madison University (JMU) in Harrisonburg, Virginia. A renovation in 2016 removed the long built-in desk and put a wall in approximately the same place. Photo from JMU Libraries stock collection.

Figure 2. Carrier Library's new service point, consisting of two tables at counter height, that replaced the old circulation desk in 2016. The doorway stands approximately where the checkout section appears in Figure 1. Photo by the author.

In this case, *design* includes the physical appearance of the furniture and building, the policies and workflows guiding the services provided there, and staff training related to the work.

Background Literature

The recent literature on the physical design of service points in libraries is sparse. Most studies of reference, circulation, or single service points have focused on services, training, use, or organizational structure needs. Several are narrative reports of redesigns prompted by the merging of several service points,[3] as was the case for this study. Others were initiated because of such problems as poor patron feedback, unappealing aesthetics, or low use.[4] Several common themes emerge in these reports. First, the location of the desk is important. It should be close to users at their time of need,[5] well-marked with clear signage,[6] and in a high-traffic, easily discoverable location.[7] However, such locations often are noisy and may host special events or other activities.[8] Relocating a desk may also impact general space flow.[9] Library staff value ample working surfaces and storage to help with workflow,[10] and those features provide the added benefit of making the service point seem weightier and more noticeable.[11] Some reports included other environmental factors, such as lighting, electrical infrastructure, and flooring.[12]

Few studies assessed library staff needs and use at the service point, though calls for this sort of assessment were made as far back as the 1980s.[13] Margo Fraser and Hilary Munro reported on an ergonomic study of the circulation counter and environment at the Medicine Hat Public Library in Medicine Hat, Alberta.[14] Their study was prompted by several years of workers' compensation complaints resulting from poor design. Their assessment resulted in changes to improve the flooring at the standing stations, to minimize movement around the desk, and to provide a variety of fixed and adjustable-height work surfaces, depending on function. Industrial designer Gourab Kar studied the layout of library circulation desks as well as hotel registration desks and airport check-in counters from the perspective of "behind the counter workers."[15] His recommendations, set out in his master's thesis and related publications, included bi-level, adjustable surfaces that could move from desk to counter height, chairs or other furniture where staff could sit during slow periods, improved task and ambient lighting, expanded storage, and better flooring.

One theme in the literature concerned the distinction between a desk, at which the library staff member sits, and a counter, at which the staff member stands. In her chronological review of articles focused on service point height, Mary Warnement found that the debate tended to fall along two axes. On the one hand, several studies found that library patrons preferred to approach staff at eye level, with the staff sitting on tall stools or chairs or standing. This finding contrasted with Warnement's general conclusion that librarians preferred to sit at desks, both for comfort and because they felt it looked more professional. The other axis was based on the type of interaction. A counter-height service point was preferable when patron-staff encounters were brief and transactional, whereas desk-height service points better supported longer consultations.[16]

Bi-level service points that can accommodate different needs have become more prevalent since the 1990s.[17] This shift may be a result of Americans with Disabilities Act

of 1990, which sets out requirements for equitable access.[18] It may also reflect a growing emphasis on universal design, a movement to create products and environments that are usable by all people with minimal need for adaptation. Multiple levels may serve a wider range of staff and patron needs. The bi-level concept is not uniformly applied, however. Some libraries still chose either single-height[19] or adjustable-height[20] furniture. Most of these service points handled exclusively reference work or were created by rearranging existing furniture.

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Theoretical and Methodological Frameworks

Apart from Kar's research,[21] this literature focused on the process of designing a new service point, rather than on assessment of an existing one. Several articles used a literature review methodology.[22] Studies that focused on staff experiences generally combined observational and interview methods.[23] Other techniques included gathering physical measurements[24] and tracing how items moved from the start to the end of a day.[25] One mixed methods study combined quantitative use data with student interviews, surveys, and journey mapping, but the purpose of that study was to increase the library's perceived friendliness, not to improve function at the service point.[26] Gathering user perceptions through multimodal approaches allows the researcher to pair objective with subjective data to build a more complete understanding of the physical environment. User-oriented methods, such as interviews, process mapping, and observation, regularly inform inclusive design of all types of spaces.[27]

The methodological framework for this study was compressed ethnography. In an ethnographic study, an embedded researcher combines direct observation of the environment with interviews of key individuals to develop a culture-based understanding of the group under study.[28] This type of qualitative investigation relies on the embedded relationship of the researcher to the research. Ethnographies typically use culturally informed domain or taxonomic coding of observational and conversational data. True ethnographies require significant investments of time and focus, which are not appropriate in cases where a quick turnaround of results is desired.[29] In these cases, an abbreviated form of standard ethnographic practices may be employed, including selecting a sample of observation periods and limiting interviews to key stakeholders. This compresses the overall time frame to a few weeks or months. A compressed ethnography works most effectively when the researcher has an established relationship with the study environment and population on which to rely for cultural cues. The current study is a compressed ethnography that took place over a short time and gathered a relatively small data set. The author's position as the associate dean responsible for both public services and library facilities allowed her to approach the research as an insider to the culture.

The study was further framed by the Person-Environment-Occupation (PEO) Model, which provided a framework to consider three aspects of the service point work.[30] This model presents a three-part transactional relationship among the physical and social environment, the skills and needs of the person working there, and the person's activities,

tasks, and occupational purpose. Colloquially, these could be considered the who, the where, and the how of work. Together, the three components support or inhibit overall occupational achievement.

In this case, the physical environment ("the where") consists of the physical furniture and building architecture of the service point, including lighting, traffic patterns, chairs, tables, walls, and entrances. The social environment includes the relationships among student workers, staff, and library users. The skills and needs of the people ("the who") relate to their training and behaviors as well as their desire for security and recognition. The occupation at the service point ("the how") includes the activities and tasks relevant to the work of the library staff, such as checking materials in and out, answering questions, and otherwise interacting with users. The overall goal is to have effective library services with a happy and engaged staff ("the what").

The two operant environment-behavior theories in the relevant literature were ergonomics and universal design.[31] The author considered these but ultimately rejected them in favor of the PEO Model. The PEO Model takes a transactional approach, in which behavior in a space is influenced by a wide range of local factors that change with time, the environment, the people in it, and the work processes that take place. The model is new to library studies but serves to contextualize work at the service point from the perspective of the worker, rather than that of the library user. Together, the PEO Model and the compressed ethnographic method made possible assessment of each component and their interactions over time. The assumption is that more congruence among each component should lead to better performance in the system. Law, Cooper, Strong, and Stewart recommend that inquiry using the model should combine both objective observation of performance in the space with subjective self-reports from the people in it.[32]

Methods

The study followed a dual-strand process, with triangulation between findings from each methodological strand. The first strand was a series of observations of the Carrier Library service point. The author made five observations during weeks 10 and 12 of the spring 2018 semester, generally a busy time in the libraries. The sampled times were a Monday at approximately 8:15 a.m. and 3:00 p.m., a Tuesday at about 11:30 a.m. and 5:00 p.m., and a Thursday at approximately 1:30 p.m. The author selected these times to get a sense of the traffic flow at the service point over the course of a day. Observations specifically focused on the activities of the staff at the service point, including their interactions with patrons, each other, and other library staff, and their movements in relation to the service point.

The service point was staffed by a mix of 10-hours per week undergraduate student workers and 15-hours per week, 30-hours per week, and full-time staff. These staff primarily belonged to the Public Services Department, which has responsibility for management of the service points and the library stacks. Student workers have two-hour shifts, although they can work consecutive shifts if they choose. Most staff shifts varied in length from two to five hours. The staff ranged in age from early 20s to late 60s and were a rough balance of men and women. All had a college degree and no visible physical impairments or disabilities. Over the course of the five sessions, the author

observed 11 different staff and student workers on their shifts, as well as many patrons and other staff and student workers who interacted with them.

The second methodological strand was a series of semi-structured interviews with selected staff. At the time of this study, 11 staff had regular shifts at the service point. Due to constraints of time, changes in job duties, and schedules, only five individuals participated in interviews. These participants were selected to provide gender parity and balance across job function. Three interviewees were males in their 30s who had worked in JMU Libraries for at least five years and had extensive experience at several different service points. Two participants were women in their 20s who had worked in JMU Libraries for less than two years and only at the remodeled service point. The interviews focused on participants' opinions and feelings about the service point. Questions were modeled on Kar's three-part interview method that asked about the strengths and weakness of the current arrangement as well as suggestions for improvement.[33] Interview recordings and the author's handwritten notes were transcribed for text analysis. The names were changed to protect participant confidentiality. Aliases used in this paper are Carl, Cassidy, Chris, Clare, and Cory.

Data Collection and Analysis

In keeping with the compressed ethnographic method, the author used domain analysis and taxonomic analysis for the primary data study method.[34] She employed NVivo software to identify activities and tasks within her notes and the transcripts. Using the ethnographic process of taxonomic coding, she built a hierarchical system that moved from individual actions to overarching occupational processes. She ended with four top-level taxonomic categories to use in the next level of analysis.

After the taxonomic relationships were determined, the author wrote narrative memos using the data coded within each category. In many cases, she included observational data to reinforce or contradict perceptions from interviews. These memos were then analyzed through the PEO Model to identify strengths and weaknesses of each component in the service point and to develop a set of recommendations.

Validation Strategies

As the administrator in charge of both the spaces and services of JMU Libraries, the author was an expert but possibly biased researcher. To ensure that her interpretations of work at the service point did not drive her findings, she shared her observations with each participant during the interviews to check her perceptions against those of participants. In coding the two different strands of data collection, the author triangulated the observed behaviors at the tables with narrative descriptions of the work from the interview participants. This led to a richer understanding of both the observations and interviews.

In fall 2018, the author shared the research memos and recommendations with two key stakeholder groups: Libraries Facilities Operations, which has primary responsibility for the two main library facilities, and Libraries Public Services, which runs the service points. Each group proposed a small number of alternate interpretations and noted where changes had already happened in the intervening summer months. These comments were incorporated into the findings and recommendations that follow.

Findings

The findings are presented using expanded versions of the research memos shared with JMU Libraries stakeholders in Facilities Operations and Public Services. Connections to the literature and discussion of how each relates to the people, environment, and occupation at the service point have been added.

Patron Interactions

The Carrier Library service point was a remarkably busy location, with significant traffic in all five observational periods of this study. Students seem to like to visit and be seen in Carrier, the most popular building on campus by annual gate count. The author recorded 77 distinct interactions between patrons and staff over 4.5 hours of observation, which averaged roughly one interaction every 3.5 minutes. This level of traffic was normal given the time of year but higher than that reported in many studies in the literature.

This busy service point is the first point of contact for any basic information need, as Chris explains:

> That [need] could be anything, from general circulation stuff that comes up, you know, checking stuff in and out, typically it's more accessories. They're checking out laptop chargers, headphones, DVDs, communication tests, all that sort of stuff in addition to the books that we send people up to find and they bring back down. But that could also be pretty much anything that comes up, so, a lot of times, I'm acting as unofficial tour guide [*laugh*]. You know we get people coming in asking questions, a lot of directional stuff, both within the library and around campus.

These interactions generally followed a prescribed set of steps. First, the patron approached the service point and was greeted by one of the staff. The patron asked a question, had a brief interaction with the staff person, and then left. Most interactions required the staff to use the computer, exchange material across the table with the patron, and leave the area to either retrieve or return an item from behind the wall. Clare also noted that the main service point was responsible for answering the telephone in the morning and evening when the separate virtual desk for phone, chat, and e-mail questions was not staffed.

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While some participants said they liked being busy and needed, others felt that the "hectic and anxious" pace forced them to rush patron interactions. The sense of urgency created by a waiting line sometimes resulted in incompletely or incorrectly answered questions, which the author observed and Carl noted in his interview. The occupational component of the PEO Model is complex, with a wide range of activities and tasks required on demand. Small variances in personal experience and skills or inefficiencies in the physical environment may further compromise service quality.

Training for the service point stressed "heads up customer service," in which staff continuously monitor traffic to provide a welcoming and active appearance. As Cory

put it, "One aspect of the version of customer service that we have is, the staff becoming trained to being somewhat hypervigilant, and so we have frequent eye excursions, and we are training and asking people to regard people as they walk up."

The successful application of this kind of customer service depends on good alignment among all three PEO components, including staff skills and personalities, a supportive social and physical environment, and reinforcement in staff evaluations. In interviews, participants expressed a belief that monitoring behavior was more common than observed. The author perceived that few staff successfully sustained an alert, approachable manner during quiet moments. Both student workers and adult staff tended to focus on their computer screens or engage

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in conversation at such times, and thus were not aware of what was happening around them. At one point, a student entered the lobby costumed as Totoro, a Japanese anime character. The staff failed to notice until the student passed the area a second time and the author laughed.

Interview participants talked about feeling both exposed and yet isolated when working at the service point. The service point stood in the middle of public traffic flow but was separated by a wall from additional staff support. The wall blocked the service point from staff backup more effectively than anyone had expected during the renovation. "It's the weird blend of feeling alone under a spotlight," suggested Cory. Chris noted, "We want to be seen. We want people to know that they can come to us to ask questions. But I don't want people to feel that they're in a zoo and just sitting there on display." This feeling of being "on display" was also reported in the literature about free-floating or proscenium-type desks.[35]

The author observed that most traffic in the general area was students moving with purpose to some other part of the library, including the Starbucks café. These students generally ignored the staff, even occasionally cutting directly in front of the tables without acknowledging their presence. The only people who looked at the service point without asking a question were parents in campus tour groups. One participant suggested that the staff feel they are "on display" because the dark purple wall and the white tables present a high contrast with each other, particularly when lit by track lighting. The wall "is very bare, so it's very striking and sort of intimidating," said Cory. Another staffer, however, said, "I like the purple."

One feature of the service point is the book return, an opening in the purple wall a short distance away. Patrons are supposed to return books by sliding them into the opening. This procedure lets staff batch-process returned items, which results in fewer check-in mistakes. Patrons rarely used the book return unprompted, however, and many staff accepted book returns directly rather than telling patrons to use it. In observation sessions, the author saw the same student worker at different times direct patrons to the book return, accept books and then deposit them herself in the book return, and take books and check them in herself. Clare noted that staff have attempted to increase use of the book return because it cuts down on check-in errors. She speculated that the current "tiny label" causes many patrons to miss it, and one of her top suggestions for improvement was "giant book drop signage!"

As a category, patron interactions included all three components of the PEO Model. Interactions were facilitated or constrained by the habits and skills of the staff person on duty, by the physical nature of the service point, and by the workflows that drove activities and tasks there. For instance, the "patron returns book" activity varied depending on whether the staff person insisted on patrons using the book return, an interaction of the Person and Occupation components. The activity was constrained by the surface area of the tables and the distance to the book drop, a shortcoming within the Environment component. Curiously, the centrality of the patron interaction with library staff and the impact of the service point on those interactions were rarely, if ever, discussed in the literature.

Physical Relationship to the Furniture

In contrast to the previous category, the physical relationship of patron and staff to the furniture was well-represented in the literature. Analysis of this category focused on the environmental and occupational components of the PEO Model.

The high interaction load at the service point impacted the fit between its physical environment and the staff working there. As noted earlier, nearly every interaction required staff to leave the service point area. For the most part, they made trips to the staff area behind the wall to retrieve or return items, but they also accompanied patrons to the computer area or the book stacks. Even requesting backup help required staff to leave the tables because of the wall separating the public and staff spaces. Although staff members use the online collaboration platform Slack to share information, few of them use the system for quick-response needs, such as requesting backup. Slack is a cloud-based system that supports real-time and asynchronous, threaded group conversations.

The author observed heavy traffic through the service point entrance. Much of this movement was related to patron interactions, but other traffic was not. Cassidy noted that this entrance is one of only two to the entire suite, and so much of the traffic to and from the entrance is not related to service point work. She added, "That gets a little confusing when you see random people coming in and out and you don't know who they are."

Although most of the student workers sat in a tall chair during their shift, staff often stood, especially during hectic periods. Clare said:

> The constant getting up and down, especially if it's multiple transactions in a row—I come up, and I hike back into the chair, and then the next person wants the course reserve that's right next to the one I just pulled. [*laugh*] If it's busy, it can get kind of tiring. So, I just stand. It just feels better.

The service point was extremely busy on average but also had long periods of slow traffic. For instance, the author observed many fewer users during the Tuesday 5:00 p.m. session than during the 11:30 a.m. period the same day. At these times, staff and student workers tended to sit in chairs and work on their computers. This correlates with Kar's findings that busy library counters need flexibility between standing during busy times and sitting during slow times.[36]

Chris reported that he had not heard any pushback from student workers or staff about hopping into and out of the chairs. He did "worry about morale and the physical toll" that doing so could have on the older staff. According to ergonomic standards,

workers should be able to place their feet flat with their knees bent at a roughly 90° angle when sitting. Small stools had been repurposed as footrests for this purpose.

One of the results of this heavy traffic was that the tables were often left unstaffed or with only one staff person, which occasionally resulted in a patron abandoning his or her place in line or the overworked staff person giving a quick but incorrect answer. The physical design of the space influenced this. At the old desk, Chris explained, staff "could swivel on their chair, and they'd have three people looking at them from their offices with line of sight." He explained that he knows people are behind the wall but has a hard time

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getting help because "I can't see them, I can't get ahold of them very easily." Cory agreed that the wall "may mean leaving the desk unattended just to find somebody, instead of giving a head-nod and catching somebody's eye."

The small tables had both positive and negative aspects. They were easier to move around than the large former desk. Chris acknowledged that getting to the patron was easier in the current setup than with the old "barge-like" counter. He explained, "If somebody comes up and says, 'I have a meeting with so-and-so librarian,' in the past, I think we tried to have people step out and say, 'I'll walk you over there,' but it was such a *process* to come around the desk."

The new design also removed the barrier that prevented patrons from moving into staff space. In the author's observations, patrons usually stood between the two tables or even beside the staff person sitting there. In interviews, staff participants expressed discomfort with this invasion of their personal space and concern about potential privacy violations caused by this patron behavior. Two interview participants noted that patrons occasionally "sidle up next to the computer on the outside," surprising the person sitting there. Carl noted, "I know especially our female students have complained about that, about having to ask people to 'take a step back, don't come around here and look over my shoulder.' But there are no real barriers or signs that stop people from doing that." Cassidy agreed: "Because it is so open, there's no barrier. People can come around and be in your space, and you can't really stop them." This problem was not reported in the literature. The friendly social environment at JMU may contribute to this unwelcome patron behavior, but the configuration of the small tables may be the primary cause.

The huge former service point formed a physical and visual barrier to library users. The libraries wanted a smaller footprint, but the new service point may be too small. The insufficient surface size and its height cause problems for work processes involving batch returns and loans. There is no convenient place to temporarily put returns; every time a book or accessory is handed in, the staff person must leave the service point to put it away. The lack of space to put a backpack requires patrons to either bend to the floor or balance the backpack on the corner of the table. Its height means that patrons using wheelchairs, children, or adults who are shorter than average struggle to communicate with staff.

A lack of storage for frequently used items also contributes to the need to regularly leave the tables to retrieve things. The small cubbyholes in the current furniture are more

difficult to use than drawers and too small for common personal items, such as water bottles. Underestimating the surface area and storage needs of a merged service point has been reported in other studies as well.[37]

The angle of the tables relative to the lobby area and to each other has both advantages and disadvantages. The tables are angled so that staff have a roughly 200° view of the main lobby. This allows them to monitor activity within the busy lobby area. Cassidy identified this as a major benefit of the layout: "I like its location, because it's very close to the door, and then you're able to see a lot of the most-asked-about things in the space." However, the angle means that staff face away from each other, causing problems for informal communication and confusion for patrons. "When lines start to form, it gets messy [*laugh*], because [patrons] don't know where to stand. I think that could just be [because] the desks are kind of angled," suggested Clare. The angle also seems to diminish the visual weight and formality of the service point. The author observed that the full-time staff tended to work at the table closer to the elevator and entrance. Cory thought it had the best view of traffic and was often busiest. Unlike the service points in several other studies, the one in Carrier Library already stood in the best location possible, close to the main doors, and there was no need to move it.

While staff retraining could fix some of the problems highlighted within this category, the primary problem is a mismatch between the physical environment and the workflows involved in materials processing. The lack of surface area and storage at the tables means that nothing can be stored, even temporarily, within easy reach of staff. The physical barrier between the staff and their backup exacerbates their sense of being alone, which impacts the social environment of the department.

Socializing

The social environment is critical to the culture and efficiency of the service point because it helps students and staff feel they belong. Although the Public Services Department is large and diverse, its leadership has promoted a collegial culture to narrow the distance between people. This emphasis aligns with the highly social environment of JMU and the inclusive atmosphere encouraged within the libraries.

The service point is a busy social space, particularly among the student workers. Several interview participants liked that the closeness of the two tables and the overall noise level of the space made socializing between the stations easy. Socialization was not limited to coworkers. On several occasions, students came to the service point solely to hang out with a friend who was on duty. One extended conversation involved two student workers, two staff members, and two student patrons and lasted at least 20 minutes. Even in an observer role, the author found herself drawn into social interactions, both with staff and with other people who came over to talk. This frequent socialization seems to correlate to the sense of being exposed mentioned earlier. People notice when someone they know and like is at the service point.

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At the same time, interview participants bemoaned the lack of socialization caused by the separation from the staff working space. Chris described it as feeling "detached" and reported that staff "feel like less of a department" because of the inability to connect with the functions and people in the staff space. Carl noted, "It's a little difficult to build those relationships when you're out there, it feels very isolating." One way that backup staff compensated was to "pop out there and stand there for a little bit," Cory noted, but he also said that he sometimes feels he is looming over the staff and crowding the space. The author observed that when the backup person hung out behind the tables, it caused traffic flow problems, including collisions in the entrance to the staff area.

Consideration of how to shape the social environment around the service point is absent from the literature. Careful management of socialization, particularly in a large, busy service point, is critical to effective occupational achievement. Retraining students about when it is appropriate to socialize with friends while on duty may be needed. However, the main concern is that the physical barrier of the wall separates staff not just from their backup but also from the life of the department. The sense of loneliness and the compensatory behaviors of hanging out when not working seem to impact the staff's ability to maintain the desired "heads-up" customer service model central to strong patron interactions.

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Furniture Design

The author asked interview participants to suggest features of their ideal service point. As noted in the "Methods" section, this question aligned with the technique used by Kar to solicit ideas about spatial configuration.[38] Participants nearly always focused on desired improvements to the physical environment of the service point, to the exclusion of changes to department culture, staff skills, or work processes. Many of these suggestions were practical and simple. Carl suggested that "just having more internal storage would be good, like a cabinet, drawers, things like that." Similar pragmatic suggestions included having a bi-level desk, the ability to adjust seat heights, and better signage and lighting.

All interview participants suggested trying to find ways to connect the backup staff with those at the service point. Replacing part of the solid wall with glass or building a third station for a backup person at the service point were suggested to mitigate this problem. None of the interview participants recommended virtual solutions, such as adding a Slack channel for backup requests.

Participants wanted to make the service point seem more traditional and official and found value in the traditional look of the former desk compared to the modern tables. This sentiment also appeared in the literature.[39] All five interview participants mentioned the small, unofficial-feeling footprint of the tables. One person said that staff call the tables the "genius bar," a reference to the white furniture

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in Apple stores, or the "yogurt bar" because they resemble the café seating at a frozen yogurt store. Neither of these impressions represented the image that staff wanted. They were concerned that the informality of the tables confused patrons about their purpose. Cory noted, "Because it's a high traffic zone, and because the desks don't convey a traditional service point anchoring for users, people walk all over the place." Chris had a slightly different take:

> The desk per se gets kinda lost in the sea of everything because it's about the same size as all the other study tables there. And there's no identifying information on the wall. A lot of [patrons] are sitting there saying, "Is this the front desk? You know, is this where I come to do my business and all?"

All participants suggested that the service point be given more optical weight and better signage. "The way that it's set up, it doesn't look very authoritative," said Cassidy; "It just sort of exists, and if you don't know what it is, then you don't know what it is." Improving visual weight, formality, and signage were also common themes from the literature.[40]

Discussion

The small footprint of the service point allowed both ease of movement among the staff and the invasion of personal space by patrons. It also created problems for managing the materials that change hands there. The busy movement around the service point could be addressed more efficiently. Perhaps most importantly, minimizing the sense of being "alone under a spotlight" could help staff feel more comfortable and valued while working their shifts. The physical design of the service point both influenced and was impacted by workflow, social, and structural features of the environment in ways that should be considered. These findings have some clear implications for the next iteration of the service point in Carrier Library. While most recommendations relate to the environment component of the PEO Model, important considerations touch on the other two components as well.

> **All participants suggested that the service point be given more optical weight and better signage.**

Improvements to the Personal Component

According to Law, Cooper, Strong, and Stewart, changes to the personal component of the system are often difficult to achieve.[41] Additional training may help people gain new or improved skills, but attempting to change the culture will likely be ineffective. In this case, training to emphasize the "heads-up" customer service model could help alleviate stress over being visible while at the service point. Addressing undesirable behaviors at the service point, including blocking traffic flow at the doorway and holding long conversations during busy periods, could also help remediate problems around movement and socialization. If staff knew how to adjust the chairs to the right height for their bodies and where the stress-reducing floor mats were kept, it might improve their physical comfort.

Some student workers could likely use additional training in basic library work skills. These skills include how to use the online catalog to check the availability of reserve books, the principles of line management, when and how to make referrals to answer reference questions, and the accepted procedure for handling book returns. All these deficits in staff knowledge resulted in additional movement around the furniture and, in several cases, negative outcomes for library users.

Improvements to the Environment Component

As noted earlier, most recommendations relate to the physical environment of the service point. These suggestions align with the literature, which overwhelmingly focuses on physical attributes over personal, social, or process ones.

The first recommendation is to address the size, visual weight, and feel of the service point. In the short term, this could involve placing a third, desk-height table between the two counter-height tables. The center table would provide a lower surface for accessibility as well as add 50 percent more surface area to the service point. If the tables are arranged in a line, the problems introduced by the current angle would be reduced and library users would not move around the tables into staff space. Pulling the entire three-table unit away from the wall by about a foot would also give more space for the backup staff member to stand when needed and would maintain the passageways at the side of the service point. To add storage, narrow bookshelves or file drawers could be placed against the wall or, if short enough, under the tables.

Large, clear, simple signage should be added above the tables. The importance of signage is discussed in the literature[42] and supported by these findings. In addition, floor maps and building directories should mark the location of the service point. The book return should also be clearly labeled to attract library user and staff notice.

Prior studies seldom addressed other environmental factors, such as lighting, electronics infrastructure, or walls and flooring. The track lighting at the Carrier Library service point is harsh and aims at a blank, bright wall. This lighting could be softened with different bulbs, but a more effective change might be to add some decorative element to the back wall. A soft painting or hanging would break up the harsh visual effect of the purple wall and would also help with noise abatement and echoing.

Improvements to the Occupation Component

Changes to access, circulation, and reference services at the service point fall within the occupation component. The standard policies and workflows determine what activities and tasks are expected of staff at the service point. A large proportion of the work at the Carrier Library service point is checking in and out power adapters, headphones, and other computing accessories. Public Services could audit these items to determine how many are needed and whether they could be moved to a more convenient location. If additional storage was provided, short-term loans, handouts and maps, sign-in sheets, and other high-use items could be kept outside the wall rather than behind it, cutting down the number of trips staff take away from the service point. A change to the procedure for requesting backup help, such as using the Slack system, could help with rapid response needs for higher-tier services.

Historically, the impact on the service point's occupational achievement was not considered when new policies or programs were developed. This could explain what seems to be a significant misalignment between the occupation and environment components. While retrofitting the physical space to current practices is an option, a better plan moving forward would be to include environmental and personal considerations up front.

Limitations

Limitations of this study include the small number of participants and the impracticability of discussing the phenomenon of the service point in depth with every person who works there. This is a common limitation with qualitative research. In this case, developing a rich and valid story about the service point was more important than identifying every possible response through a survey. The compressed ethnographic method requires sampling observations and interviews, which further limits the number of experiences and voices that are included. Evening and weekend observations and the perspectives of student workers and night and weekend staff were not included in this study. In this phase of the research, the author could only interview full-time and three-quarter-time staff. Their perspectives may differ from those of student workers and half-time staff who have more frontline responsibilities. The author deliberately chose busy times to do observations. Some of these findings are closely tied to behaviors of both the staff and library users at these times and might not occur at slower times.

Conclusion

JMU Libraries has begun changes to training, physical space, and workflows, in part because of this study. These included improvements to the furniture, signage, and training. Plans are underway to address the expanse of purple on the wall. A new, purpose-built piece of modular furniture was installed in the fall of 2019 that addressed many of the findings from this study.

In the future, the service point could incorporate a wider diversity of library departments and services, such as interlibrary loan, makerspace services, or equipment checkout. JMU Libraries hopes to start a major renovation to Carrier Library in the next five years. It will be important to keep in mind the findings of this study when planning a future service point. A careful assessment of the who, where, and how of the work should be central to the design and architecture of all future iterations.

In addition to the valuable findings about the Carrier Library service point design, this study served as a proof of concept for the methodology in library operations management. The PEO Model provided a practical framework for studying workflows and processes from the staff perspective. This model helped the author develop a broad understanding of the fit between the physical and social environments and the people and work that engage with them. Other libraries interested in assessing their service points may find it similarly useful to include all three components of the PEO Model in their analyses.

The author also recommends the compressed methodology to other libraries as a means of balancing objective and subjective information about service point design. The

two strands of data collection, observation and interviews, combined to provide a more robust picture of what happens at the service point than either would have furnished individually.

Acknowledgments

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