Leveraging Data-Driven Research to Design Academic Libraries

Authored by

Tom Sens, Client Leader

Kyle Moll, Intern Architect

BHDP

INTRODUCTION

When it comes to enhancing the student experience, specifically, the use of the academic library, it is imperative for stakeholders to understand student expectations, how and why they use library space. That means considering and studying student preferences and behaviors to gather that knowledge and use that data to create more meaningful and satisfying library experiences.

To accomplish the goal, BHDP commissioned Ask Your Target Market (AYTM), an independent online market research firm, to survey 500 college students nationwide in the fall of 2020. The students who participated in the survey were currently enrolled at a four-year school, and were sophomore level or higher, including graduate and post-graduate students, to ensure they used their university library prior to the COVID-19 pandemic. Additionally, the survey was open only to students who spent a minimum of two hours per week in the library pre-COVID, confirming survey respondents were regular library users. Results showed correlations between student success and time spent in the library, as well as student preferences on library resources, where they like to spend their time in the library, what they felt is missing from the library, the importance of 24/7 library access, and the impact of library space on emotional wellbeing. In this context, student behaviors and preferences in the library present design implications for library space planning as schools begin rethinking their spaces for a post-COVID world.

TRENDS IN ACADEMIC LIBRARIES

Libraries perform an important role as an educational resource of an academic institution, especially for students. Student expectations are that libraries need to be a one-stop educational hub where they can study alone, collaborate in groups, receive tutoring and mentoring, meet with faculty members, use the library's resources, participate in video calls, relax between classes, and socialize with other students. These options help to differentiate academic libraries because students have other choices for study such as at local coffee shops and restaurants, where they can eat, drink, and socialize—activities not allowed in every academic library. Adapting to meet the needs of their users and adding value to students' academic experiences are crucial for academic libraries to be the place of choice to study and to remain relevant for students and faculty.

Libraries, often built in an era where the book collection and independent study were the primary focus, are engaging in renovations to create more spaces that facilitate collaborative group activities. Recent studies, including the survey described later in this paper, confirm that while it is important to offer group study space in libraries, students primarily prefer to study by themselves in the library. The survey data indicates that the number one reason students choose to use the library is to study alone. Students also prefer to be surrounded by other students to help them feel they are part of a larger community.[1] The majority of students know where their academic libraries are located and recognize them as places to study, meet friends, receive help, and complete assignments. This shared experience of using their academic libraries fosters emotional senses of welcomeness and belonging.

A recent article by the Association of College & Research Libraries (ACRL) discussed general student wellbeing. One trend identified by ACRL is the creation of space in libraries to promote student health, security, and happiness, including areas for food pantries, meditation, prayer, yoga, and naps. Another trend is supporting neurodiverse students, including those with autism spectrum disorder, by offering quiet spaces in the libraries with reduced stimuli.[2]
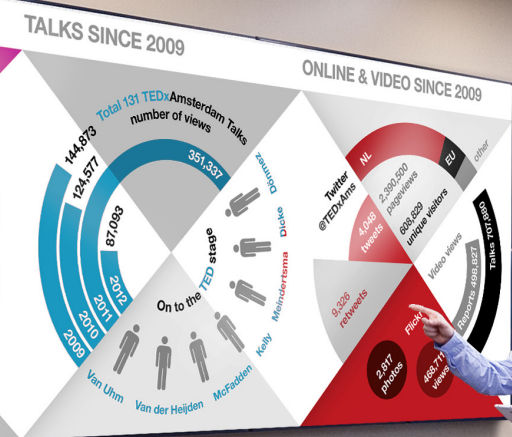
The behaviors, moods, and emotions of students while using their libraries' resources contribute to their wellbeing and overall academic success. Offering library spaces that allow a variety of study options, including a level of privacy, comfort, noise, and librarian support, can accommodate the diverse needs of the library users.

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[1] Kim, D., Bosch, S., & Hwa Lee, J. (2020). Alone with others: Understanding physical environmental needs of students within an academic library setting. The Journal of Academic Librarianship, 46(2), https://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=1002&-context=id_pubs.

[2] ACRL Research Planning and Review Committee. (2020). 2020 top trends in academic libraries. College & Research Libraries News, 81(6), https://crln.acrl.org/index.php/crlnews/article/view/24478/323154 https://chainstoreage.com/technology/report-online-sales-will-reach-645-billion-in-2020-but-growth-slowing

RESEARCH SCOPE

The purpose of the research was to understand students' preferences, behaviors, and experiences when spending time in their college or university libraries. AYTM collected input from 500 students from across the United States over a two-week period in October 2020. All students were above the age of 18 and only students who were regular users of the library (minimum of two hours per week) were eligible for the survey.

Additionally, current first-year students were excluded from the survey, as they did not have in-person library experience. Information collected on students' perceptions and behaviors was for pre-COVID-19 library use and not current library use. Demographic data collected included gender, year of school (including graduate and postgraduate), ethnicity, and area of the country where the student lived. The margin of error was below 5% and statistically insignificant.

All respondents attended a four-year higher education school. There were equal numbers of sophomores and juniors in the study (113 in each group) and 116 seniors. The remaining 158 respondents were graduate or post-graduate students.

RESEARCH FINDINGS

The goals of the research were to:

1. To understand from a broad, national perspective both how and why students use academic libraries.
2. To discover the emotional aspects of students' library use.
3. To identify any perceived gaps in library services.
4. To determine any relationships between library usage and students' academic successes.

The number one reason why students visit the library is to study alone (selected by 55% of students), followed by studying with friends (42.2%). Most students (58.6%) prefer quiet study spaces in the library. Before the COVID-19 pandemic, 38% (190 students) spent five to seven hours per week in the library, 33% (165 students) spent two to four hours per week and the other 29% (145 students) spent eight hours or more per week in the library. Post-graduate students reported spending the most time in the library with almost 42% spending eight or more hours in the library weekly.

Students were asked to describe their ideal setting/experience in the library. Nearly 25% prefer a soothing/comforting/relaxed setting while 16% wanted a setting that is quiet for heads down concentration. Students indicated there were spaces, resources, or experiences missing from their libraries. These included comfortable seating, selected by 31.4% of the students, space to relax, selected by 27% of students, and more natural light, selected by 24% of students. Some of the write-in responses from students included:

- *More privacy when studying*
- *More study spaces with charging stations*

- *Providing natural light entering in spaces that can be used for focused study and a more relaxed environment*
- *More seating that is comfortable and secluded*
- *Longer hours (selected by 23% of students), with a desire for 24/7 hours of operation*
- *More areas for group projects*
- *More study/tutor events.*

Students also requested more charging stations, 24-hour access to coffee, a snack bar with healthy snacks and healthy juice drinks, and a childcare room.

Students were asked to pick the emotion which best describes how they feel in the library and also how they would like to feel when in the library. For both questions, "relaxed" was the most selected reason, followed by "welcomed."

Only 4.2% (21 students) said that using the library had no impact on their academic success while 45.8% (229 students) said their library usage had some positive impact on their academic success and 39.6% (198 students) believed their library usage had significant positive impact on their academic success. Together, 85% of students choosing the library either had some positive impact or significant positive impact on their academic success.

When asked which library resources played a positive role in their academic success, 292 students (58.4%) selected quiet study space, and 167 students (33.4%) selected group study space. Having access 24/7 to the library was important or very important to 80% (400) of the students.

Responses to the survey questions were analyzed by level of study, time spent in the library,

gender, region of country where the student lived, and students' perceptions of the library's impact on their academic success. Each of these segregated groups reported the same top response(s) for the following questions:

- Why do you visit the university library? *Study alone* was the top response for all groups.
- When you are at the university library, where do you spend your time? The top response was *quiet study space* for all groups.
- How would you describe your ideal setting/experience in the library? *Soothing/comforting/relaxed* was the top response, followed by *quiet for heads down concentration.*
- Which of the following library resources has played a positive role in your academic success? *Quiet study space* was the top response for all groups.

Some interesting differences were uncovered when comparing the group who studied in the library at least eight hours or more per week (145 students) to the group who studied less than eight hours per week in the library (355 students). While both groups chose *study alone* as their top reason for visiting the library, the group who spent more time in the library chose *quiet place for concentration or decompressing* as their second most selected reason for visiting the library, while the group who spent less time in the library chose *study with friends* as their

second most selected reason. Additionally, 49% of the group who spent more time in the library reported their library usage significantly positively impacted their academic success as compared to 35.8% of the group who spent less time in the library.

Another consideration evaluated was whether the students reported their library usage had any positive impact on their academic success. Almost 60% of "not impacted" students (those selecting minimal or no impact to the question of how their library usage impacted their academic success) indicated that *having 24/7 access to the library was not important or nice to have but not essential*, however, 84.3% of "impacted" students (those selecting significant or some impact to the question of how their library usage impacted their academic success) stated 24/7 access was either important or very important. Only 15.2% of the "impacted" group selected *nice to have but not essential* and less than 1% selected *not important*. Additionally, 63.2% of "impacted" students stated that quiet spaces in their libraries played a positive role in their academic success as compared to only 30.1% of "not impacted" students. One-half of the "impacted" students felt relaxed in the library while only 35.6% of the "not impacted" students felt relaxed in the library. Interestingly, a higher percentage (23.3%) of "not impacted" students stated that their campus libraries had all the resources they needed compared to only 19.9% of "impacted" students.

ANALYSIS OF FINDINGS AND RESULTS

This research demonstrated students' behaviors in the library varied. Even though *study alone* was the top reason and *quiet place for concentration or decompressing* was the second most selected reason selected for visiting the library (55% and 42.4% of all students, respectively), *study with friends* was a close third, chosen by 42.2% of all students. The top five areas where students spend their time in the library were: *quiet study space* (58.6%), *computer lab* (37.8%), *reading room* (35%), *café* (33.8%), and *group study space* (32.2%).

Students want to feel they belong in the library and are emotionally welcomed when using the library. This supports the broader trend of diversity, equity, and inclusion (DEI). When students were asked which emotion best describes how they would like to feel in their library, *welcomed* was the second most chosen emotion (after *relaxed*) when analyzing the student responses as one group. It was the top emotion chosen by juniors and those who spent more than eight hours in the library weekly. While only 16% of all students indicated they felt stressed in the library, 10% of them selected Asian American as their ethnicity while 33% identified as "other." Students' ethnicity is an under-considered factor in library usage. Non-white students made up a significant portion of those who feel more stressed in the library. Therefore, addressing this stress issue and ensuring the library promotes a sense of welcomeness and inclusivity for students of all ethnicities is a critical consideration for any library renovation.

Distinct types of spaces, designed to invoke both relaxing and welcoming emotions, are required to meet these needs. These include quiet spaces where students can concentrate with minimal distractions, group study spaces which allow free-flowing conversation and idea sharing supplemented by technology, "alone/together" spaces where students can study in the presence of others without requiring constant engagement, and social spaces that allow students to feel comfortable, even if they are not actively studying or completing schoolwork. Students were asked what physical change the library could make to encourage them to use it more frequently. The responses included *more comfortable seating and more places to relax, more individual rooms or independent workspaces, and collaboration rooms*. Students may perceive the "formal" design of older or not recently renovated libraries as less welcoming and relaxing. In fact, students wrote in suggestions such as, "make the furniture a little more modern," "make it more open, instead of too formal," and create a "more home-like feeling." The challenge is incorporating these diverse kinds of areas in libraries not originally designed for these accommodations and those facing budget constraints with any kind of a minor update or major renovation project.

VIRTUAL ROUNDTABLE

In November 2020, BHDP Architecture facilitated a virtual roundtable with ten library deans and directors from academic institutions across the United States. These leaders identified and discussed trends that will impact the near-term and long-range future of the academic library. The consensus from this roundtable is that library leaders are rethinking traditional library spaces, especially with tighter funding. They are recognizing the importance of their roles as librarians and as community builders, and the importance of the role of the library as a forum to enable people to come together in their community. One significant trend they identified is creating library space that is "all things to all people," implying the library serves the diverse needs of those seeking quiet study, those in need of help or tutoring, those who prefer to study in groups, and those who wish to collaborate on team projects. Other important issues raised from this roundtable included:

Trends and Tensions, Virtual Roundtable Series

- **Alignment.** It is vital to align the library with top institutional priorities, so the library is considered a viable and valuable investment. The more aligned the library is with institutional priorities, the more likely it is to be among the facilities to be awarded funding for capital improvements.
- **Varying needs.** There is a high demand for group study, high-tech resources, and safe social spaces. The library's role can be a "digital equalizer" by providing Wi-Fi, technology, and software access for those who cannot afford these items.
- **Human focus.** Attention needs to be shifted away from the libraries' collections and more toward the needs of students and faculty.
- **Building communities.** Libraries need to provide places and experiences to build community by taking a leadership role in

hosting virtual and in-person community engagement events, guest lecturers, and places for visiting scholars to be welcomed.
- **Engagement.** There continues to be a strong desire among students and staff for personal connection and the collaboration between librarians, students, and faculty is key to remaining relevant.
- **Purpose.** While library leadership understands the top reason that students use the library is as a quiet haven for them to concentrate, they also recognize the need to better understand the requirements of their users and to do a more effective job marketing the library. As summed up by one library leader, "Focus on the people. It's not the library, it's the librarians that make libraries an essential part of the student experience."

RECOMMENDATIONS

> " There is not one single way of how people are and not one single space orientation. We cannot just assume this is how people are learning and how people want the space to be. Rather, we have to provide a lot of different spaces, a lot of different types of seating, a lot of different environments, and really be flexible in that way. "
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> **Robbie Bolton, University Librarian/Director of Library Services**
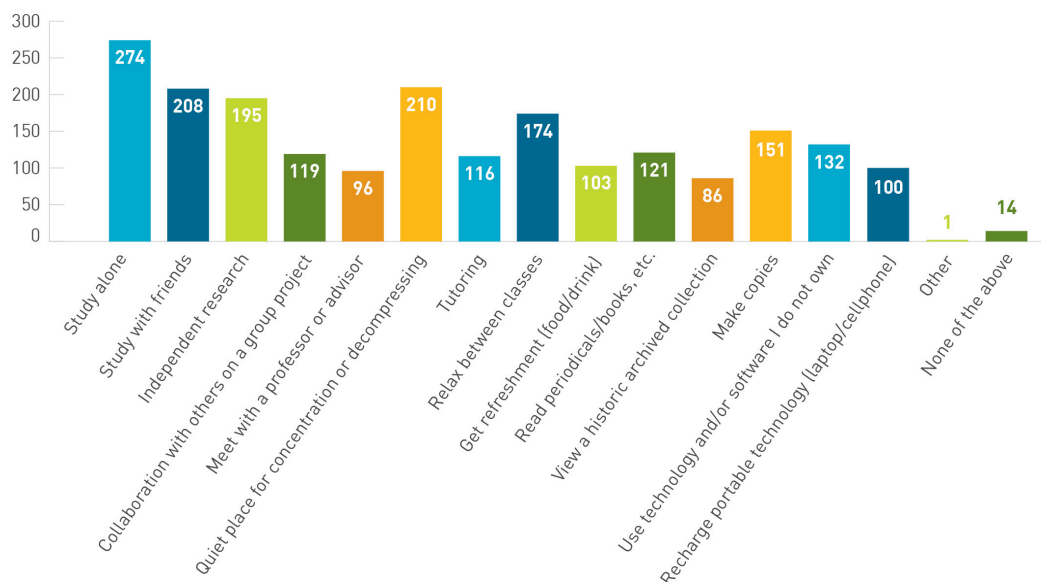> **Spring Arbor University**

Students expect their libraries to have a variety of study spaces. They want quiet places where they can study alone, spaces to be able to study alone together, and collaboration areas where they can participate in group activities. They also require space to accommodate distance learning or viewing online lectures. Incorporating a diversity of spaces in the library allows students to see that the space is "theirs." These needs may vary depending on any number of criteria including the culture and focus of the college or university, the location of the school, and the patrons of each library. "Our library has been very intentional about creating collaborative workspaces as we need less periodical storage and shelving. We are taking that down and transforming it into seating clusters with comfy chairs and more study tables for students to sit," says Robbie Bolton, University Librarian and Director of Library Services at Spring Arbor University.

While there are exciting and fresh trends in library design, library leaders need to understand the specific situation at their schools and identify the right mix that best serves their students. Rebecca L. Lubas, Dean of Libraries at Central Washington University (CWU), agrees. "The key is customization because there's not a one size fits all. The best thing for some students is finding that corner they can sequester themselves in where they are not seeing other people. Also, the same student might have different needs on a different day," says Lubas. Library administration at the University of North Carolina at Chapel Hill recognizes their students use different libraries in different ways. "They might use one library for quiet study or heads down study and then come to another library for social or collaborative engagement," says a UNC administrator. "There is not one single way of how people are and not one single space orientation. We cannot just assume this is how people are learning and how

Bar chart data:
- Study alone: 274
- Study with friends: 208
- Independent research: 195
- Collaboration with others on a group project: 119
- Meet with a professor or advisor: 96
- Quiet place for concentration or decompressing: 210
- Tutoring: 116
- Relax between classes: 174
- Get refreshment (food/drink): 103
- Read periodicals/books, etc.: 121
- View a historic archived collection: 86
- Make copies: 151
- Use technology and/or software I do not own: 132
- Recharge portable technology (laptop/cellphone): 100
- Other: 1
- None of the above: 14

people want the space to be. Rather, we have to provide a lot of different spaces, a lot of different types of seating, a lot of different environments, and really be flexible in that way." Many students in this survey asked for *more seating*, including:

- *secluded study areas*
- *more areas for group projects*
- *more independent workspaces*
- *soundproof rooms*
- *a larger study space for teams*
- *more single rooms for privacy*
- *a collaborative space room, and*
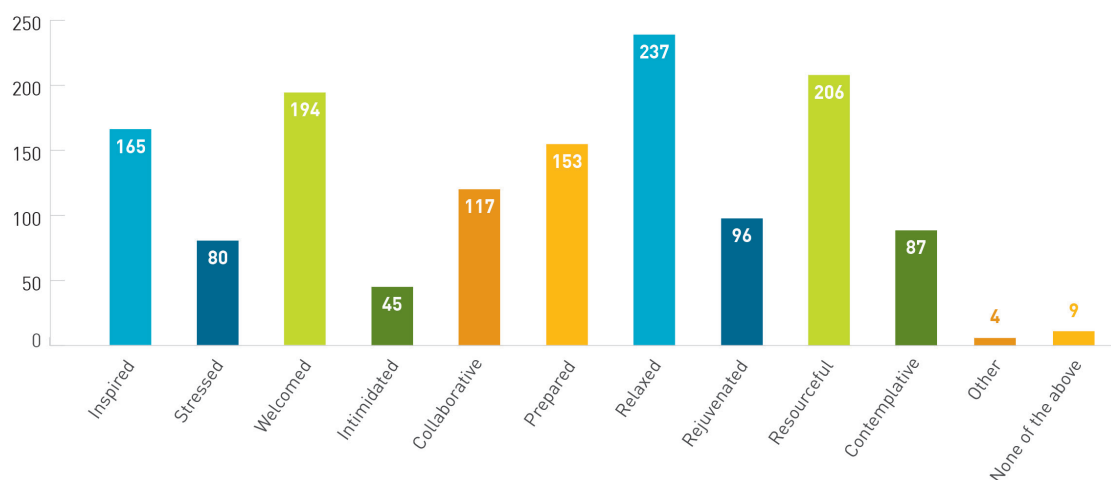- *more individual rooms that can be studied in.*

One solution is to create zones within the library to facilitate the types of study spaces students seek. Libraries often are zoned vertically with noisier activities occurring on lower floors and quiet and silent study areas on upper floors to help control sound by physical separation. Students in this study said that *people texting or talking on mobile phones* and *noisy environments* prevent them from spending more time at the library. To make the best use of the space, determine what students require in these

spaces, such as flexible and moveable furniture, multi-dimensional lighting, and additional outlets. The Ohio State University (OSU) created a space called Research Commons within their 18th Avenue Library to connect researchers throughout OSU and support their research through services and resources. This space is very flexible and dynamic. The open concept includes moveable furniture and walls to create a variety of zones and spaces, and natural light pours through the windows and glass. Students can write on the walls and rearrange the furniture, which is all on casters, to suit their specific needs. The advanced technology and visual writing surfaces allow for creative display setups. This environment encourages researchers to interact and build relationships through the use of transparency, embedded technology, and multi-function space geared towards presentations, group sessions, and the brainstorming of new ideas. The students in this study agree. One requested a "brighter, more inspiring environment," and another said, "They should include an area where students could relax and just be away from all the distractions."

NATIONWIDE LIBRARY SURVEY – PRELIMINARY FINDINGS

WHEN YOU THINK OF YOUR EXPERIENCE IN THE LIBRARY, WHICH EMOTION BEST DESCRIBES HOW YOU FEEL?

Bar chart showing survey responses:
- Inspired: 165
- Stressed: 80
- Welcomed: 194
- Intimidated: 45
- Collaborative: 117
- Prepared: 153
- Relaxed: 237
- Rejuvenated: 96
- Resourceful: 206
- Contemplative: 87
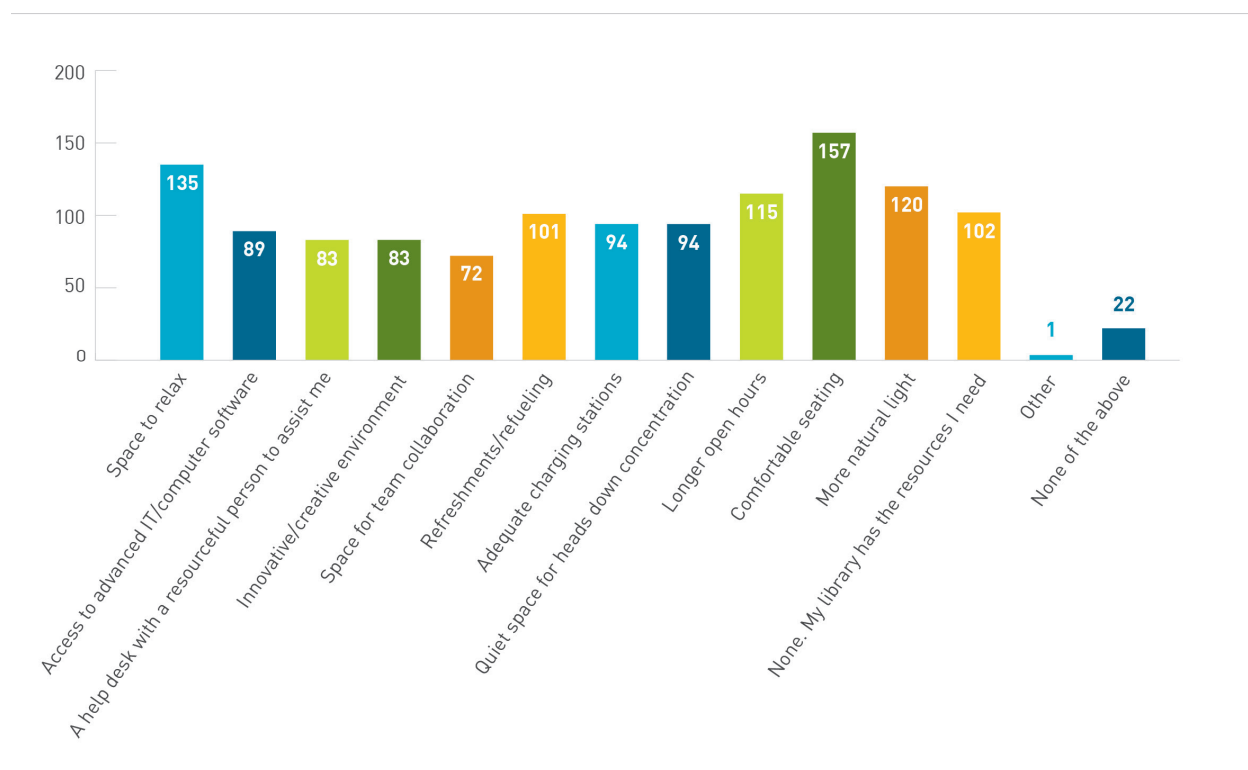- Other: 4
- None of the above: 9

As research showed, students want to feel emotionally welcomed and that they belong in the library. Survey respondents were presented with a list of eight choices (plus all or none of the above) to select from to answer this question: *When you think of your experience in the library, which emotion best describes how you feel?* "Welcomed" was selected as one of the top four reasons for all analyzed groups and was the number one reason for juniors and those stating their library usage had minimal to no impact on their academic success. In the written survey responses, students offered statements such as, "I feel safe and calm in that area, about the library." For students, one aspect of feeling welcomed is seeing other people who are like them in the library. At UNC-Chapel Hill, the library administration is working towards building a more inclusive library by thinking about diversity, equity, inclusion, and accessibility, and transforming who they are as a library. They want to make that connection as to how the library functions as a space, how people feel when they come into their library space, and how people can feel included. "Do they feel

they belong in our library space? Do they feel there is a place for them in our library spaces? Or conversely, do they feel excluded? Do they feel there are people who look like them in the space? Do they feel the services we offer are accessible to them or do they feel excluded from these services or there are obstacles?" asks a UNC library administrator. They are examining their library services and considering potential renovations to change how people engage with their services and spaces. This includes amenities such as gender-neutral bathrooms and lactation spaces. DEI and a welcoming environment in the library also can be promoted through specific design elements such as experiential graphics that promote diversity of individuals and equity of access and expression of ideas.

To further assist students in feeling welcomed in the library, it is important to create a positive first impression. One way to do that is to invest in the library's front door and the sequence of spaces immediately around it. This is an important recruiting tool as well. "Anytime tour

NATIONWIDE LIBRARY SURVEY – PRELIMINARY FINDINGS
WHAT SPACE/RESOURCE/EXPERIENCE DO YOU FEEL IS MISSING FROM THE UNIVERSITY LIBRARY?

A bar chart showing survey responses:
- Space to relax: 135
- Access to advanced IT/computer software: 89
- A help desk with a resourceful person to assist me: 83
- Innovative/creative environment: 83
- Space for team collaboration: 72
- Refreshments/refueling: 101
- Adequate charging stations: 94
- Quiet space for heads down concentration: 94
- Longer open hours: 115
- Comfortable seating: 157
- More natural light: 120
- None. My library has the resources I need: 102
- Other: 1
- None of the above: 22

groups come from our enrollment office, they're touring the library with parents and prospective students. This highlights another way students are supported at Spring Arbor University," says Bolton.

Today's students want to see and be seen in a space where they feel welcomed, comfortable, and inspired. Rethink the traditional big, fixed, and, in some instances, intimidating circulation desk and instead establish an experiential sequence so students immediately feel drawn into the library when they take their first steps inside the building. West Virginia Wesleyan College recognized this issue when its main library struggled to keep up with the academic needs of the college and lost relevance for students and faculty. Over time, this library's traditional front door technically became the back door as the campus grew in the direction behind the library. BHDP's higher education

design team engaged leadership in visioning sessions and students, faculty, and library staff in focus groups to understand their underlying challenges. One solution that emerged was creating a new library entrance on the rear of the building to become the primary library entrance. This new arrival sequence into the building created a more vibrant feel to the library and extended into the two-story entryway with a brightly lit central circulation desk, collaboration spaces painted in rich colors, and lots of open space for students to choose to study alone, study alone together, or study collaboratively. The library's physical books are featured as scholarly "wallpaper" throughout the space, allowing students to feel surrounded by books. The library's print collection was strategically consolidated on the second floor, appropriating more floor space for students' scholastic interactions. The library is equipped with ample soft seating to enable students to maneuver in a

variety of ways, and there are convenient power outlets for electronic devices, modern lighting, and temperature controls throughout the library.

Another recommendation is to consider the functionality of the library and overlay it onto the students' emotional needs in the space. For example, a formal study room with a row of 100 chairs at a table may be functional but may not be the most successful or engaging setting for most students to study. Or consider rethinking the library's large computer labs. "The library has been a place where we have big, institutionalized computer labs," says Dr. Arne J. Almquist, Vice President for Information Management and Decision Support and Dean of the Mary and John Gray Library, at Lamar University. "We want to integrate this technology in a more holistic way and move away from huge banks of computers, including developing rooms that include AV, media and more comfortable

furnishings for the way students interact and study today and more comfortable for group study." One student had a unique suggestion, "Have indicators above computer lab seats to let students know whether there are computers available. I have a big school, so much of the time the computer stations are full, and I have to keep walking around the library to find an empty computer station."

The survey results support designing relaxed, comfortable, and calm study spaces. This is accomplished by using innovative furniture solutions to create the environments desired by students. Write-in responses suggested *private cubes or pods to study in* as a physical change the library could make to encourage students to use it more frequently.

Many libraries have achieved success in creating a proof of concept in one section of the library to

Main themes: Seating, Quiet, Coffee/Food, Technology, More Relaxing

"Comfortable, serene atmosphere with all the available resources and promotes concentration."

"Comfortable seats and more charger ports, because sometimes I'm there for a really long time."

"Have a more open-air layout that invites more natural light and foster destressing."

"Have a larger study space for teams."

"Make it more open, instead of too formal."

test out ideas and demonstrate to administrators the impact that small changes to the layout of the library can have on students' library use. If the changes are successful, it is easier to gain financial support to scale up the proof of concept. Library leadership at Bowling Green State University invested a minimal amount in comfortable furniture and brightened up the space with some fresh paint on one of the upper-level floors of their library. Now, this area is a highly popular space with their students who have enthusiastically asked the library to replicate this design throughout the building because the space is often full of students. They are using this student input and a Master Plan created with BHDP to fundraise for a library renovation for their iconic Jerome Library, which was built in 1967 and like most libraries constructed at that time, was designed primarily for book stacks. The Master Plan describes a methodology to create memorable and inspiring spaces throughout the library, designed to enable the active curation of both print and digital media, provide an array of study spaces and access to technology, and encourage academic partnerships with other campus resources.

The pandemic accelerated the digital presence of the library and enhanced its ability to reach students outside of the physical walls. Physical library space may be reduced on some campuses. Rethinking the library space as a physical bridge to the digital world is key. When libraries digitize their media, they provide students with the choice to browse materials however, wherever, and whenever they choose. Students can access their library's materials anywhere with an internet connection, including outdoor spaces. As students return to campus and resume their use of the library's resources, library administrators need to continue thinking outside of the walls of the library and how to use the adjacent outdoor space. This can include allowing students to bring books outside the library to enjoy the outdoor space or extending the library outside through a portico or outdoor terrace. Tents have proven to be a highly popular method of creating temporary outdoor sheltered space, a trend that may become permanent due to their high demand." Creating outdoor study spaces under porches and amphitheaters

NATIONWIDE LIBRARY SURVEY – PRELIMINARY FINDINGS

HOW IMPORTANT IS 24/7 ACCESS TO THE LIBRARY?

18%

18%

50%

30%

- Nice to have but not essential
- Important
- Very important
- Not important
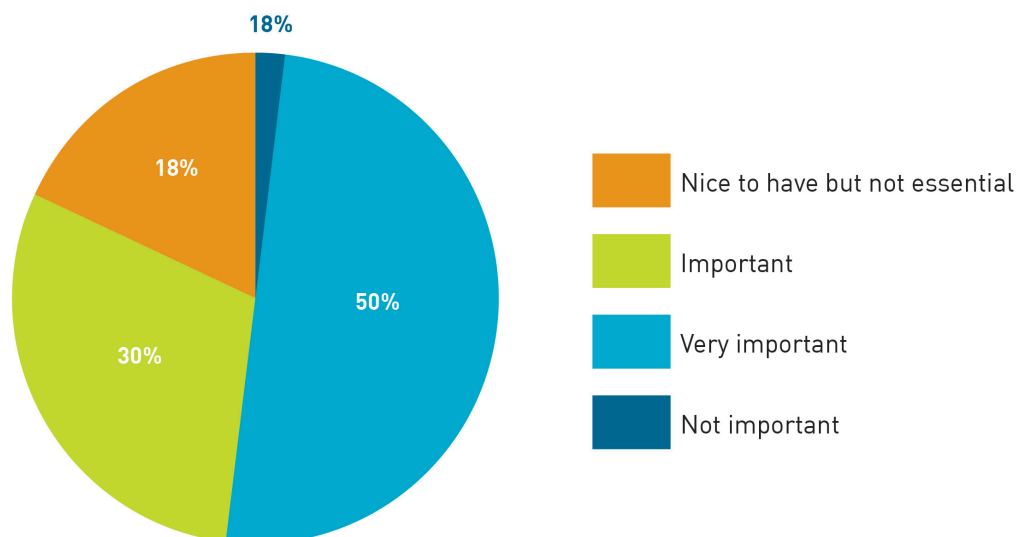
adjacent to libraries offer cost-effective library expansion space that is both welcoming and functional for students.

In this research, almost all the groups analyzed stated it was very important to have 24/7 access to the library (the exception was the group which said their library usage had minimal to no impact on their academic success). One student simply said, "I would like twenty-four-seven access." Some students indicated the limited library hours prevented them from spending more time in the library. They also mentioned how busy and overcrowded the library can get at times, which makes it difficult to find independent study spaces, especially during midterm and final exams. The written survey comments showed commonalities such as, "There is limited use on computers and software, so when the library is too full, there is little access to these resources," and "It is also more difficult to study when there is a lot of talking students." Operating the library 24/7 may be a strain on the library's operating and personnel budgets. Lubas is experiencing this at CWU where they do not have enough

staff to keep the library open the typical hours it was pre-COVID. "Right now, we close the library at 9:00 p.m., and normally during the week we are open until midnight. My students are asking when they will get this study space back." Consider alternatives including operating 24 hours a day during the week with less open hours on the weekend, only keeping one floor of the library open during the nighttime hours or allowing 24/7 access to the library during peak exam preparation times.

Additional questions to include for future surveys of students' academic library usage include whether students are attending private or public institutions and if respondents are domestic or international students. Typically, international students and students attending private institutions pay higher tuition costs as compared to domestic students and those attending public institutions. It may be interesting to ascertain if higher tuition affects how much students use their libraries and which amenities they seek from these libraries.

CONCLUSION

The library can be considered as the academic student center in lieu of its traditional role to support research, studying, and other quiet activities. Today's libraries are evolving and becoming more social-focused on the students' overall academic experience. "I think libraries, especially for many small colleges, have become a centralized gathering point on campus where students are likely to frequent and intersect in larger groups," says Bolton. He adds, "We had some space in the library that wasn't being used well, so we converted it into a writing center. We invited our academic support department to have their writing tutors placed here to meet with students. They have been a good collaborative partner. We are considering other opportunities like partnering with the IT help desk and academic support and service units and

housing them in the library where students are gathering." The students surveyed in this study agreed with this sentiment. They asked for *easy access to computers, more resources, more hours of operation, more charging stations, and more up-to-date technology.*

As students' requirements and expectations change, the library needs to adapt. It is important to be stewards of understanding what students seek in their academic library and design appropriate solutions that create those environments. This means instead of simply designing library space based on what is trendy, it is essential to make data-driven decisions based on students' input and desires.

The ultimate driving factor of any library renovation is to focus on creating the space to positively influence the student's well-being and academic success. "About 20 years ago in libraries in general, we started allowing food and drink into the building and bringing restaurant or coffee shop concepts into the building," says Dr. Almquist. "We have that here. I would like to see that integrated more into the other operations within the library. Students are going to bring food and drink in anyway. Why not provide that amenity within the building as well in a more comfortable, holistic way." Many students cited no food or beverage options as a reason why they do not spend more time in the library. Comments included *needing food or coffee and having to leave, cannot eat inside, and having to go outside to get good food.* They want their libraries to offer *different snack options, coffee, a restaurant inside the library, a coffee place, some type of café, or a place to get food or snacks.*

Today's students are dealing with unprecedented stressors affecting their academic careers. Due to the COVID-19 pandemic, their college experience existed mostly online in 2020 and continues in 2021. As a result, they are seeking empathic connections—some of which can be fulfilled by their library experiences. One student asked for "a more open-air layout that invites more natural light and fosters destressing." Another recommended "a comfortable, serene atmosphere with all the available resources and promote concentration." Additionally, the survey results indicate that students who use the library more often and those who use the library for group work or social interactions perceive more academic success. With both an empathic and academic goal in mind, it is important for library leadership to answer three key questions when considering a library design or renovation process:

- Are we improving the health, well-being, and mental state of students with this project?
- How can the library space encourage students to comfortably stay longer and encourage group and social interaction?
- Will we impact and expand their education by creating spaces that are soothing, calming, and healing?"

By providing spaces where students can choose whether to be in areas with other students and where they feel relaxed, welcomed, and comfortable, libraries offer the human connection vital to a student's academic success.

ABOUT TOM SENS

With over 30 years of experience, Tom works closely with his higher education clients to understand their vision and values, identify strategic goals, and translate this understanding into the design of physical space that promotes learning, discovery, and innovation among students and faculty. He builds strong relationships with his clients and coordinates the efforts of architects, engineers, and key client stakeholders to achieve successful, data driven results. Tom's experience includes visioning, programming, and design for new construction and renovation projects including libraries, classrooms, collaborative learning environments, and research and teaching laboratories.

For more information, contact Tom Sens at **tsens@bhdp.com**, visit bhdp.com or call (513) 271-1634.

ABOUT KYLE MOLL

Kyle is a third-year Intern Architect on BHDP's Higher Education team, with responsibilities ranging from space programming to conceptual design. With a keen interest in academic library design, Kyle has been deeply involved in several library master plans and renovations—including Denison University's Master Plan and Bowling Green State University's Jerome Library Master Plan. Kyle enjoys research and writing, and he is currently taking an active role in BHDP's research on the academic library, advancing the firm's library design expertise.

For more information, contact Kyle Moll at **kmoll@bhdp.com**, visit bhdp.com or call (513) 271-1634.

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