
Driving the BUS: A Multimodal Building Use Study and Needs Assessment

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Purpose

While the concept of “library as place” is a strong factor in the role of academic libraries, many libraries struggle with fitting the current needs of their students with a building that was designed in a time when studying, physically, was very different.

Wright State University Libraries finalized a new strategic plan in August 2014 that called for a revitalization of the library building. Specifically, the directive was to, “Revitalize the library building to accommodate the evolving needs of students, faculty, and staff, improving the visibility and accessibility of library resources.” This seemingly simple directive led to a yearlong assessment project. The aims were threefold: to identify how the building is used in its current configuration; to compare the needs of library users and what is currently available to them to identify any gaps; and to identify ways to improve the library building to better meet the needs of users.

Design/Methodology

With a goal to conduct both a building use study and a needs assessment, the assessment team quickly realized that there were two separate components: the building use study required information about how the building is currently being used, traffic patterns, seating preferences, and more. The needs assessment, however, would be strongly prospective and would require information about users’ preferences if they were not constrained by the current building design and layout.

This project began in the fall semester of 2014 and the final report was presented to library administration in January 2016. The first semester was dedicated to developing the study, pre-testing different components, and meeting with the director of the Office of Institutional Research for feedback on the project design. What developed out of these early planning sessions relied on multiple methodologies, divided into two phases.

Phase One—Building Use Assessment

Data Source One—Building use count

In the first phase of the project, during spring semester 2015, the assessment team focused on the current use of the library building. The first priority was to determine how many people were using the space, when they were using it, and how they used it. Each question, though, had a variety of accompanying questions that went with it. The assessment team knew that they would need to rely on sampling to conduct counts. It was important to get a sense of whether and how use of the building changed over the course of a semester, the course of a week, and the course of a day. We determined that the counts should be done two days a week, on Tuesdays and Wednesdays, to account for different class schedules on Monday, Wednesdays, and Fridays, and on Tuesdays and Thursdays. We selected six weeks of the 15-week-long semester to conduct the building counts, starting with the second week of the semester and culminating in finals week. For each of the two days during the six weeks of building counts, we conducted the counts at six times throughout the day every three hours, starting at 8:00 a.m. and ending at 11:00 p.m.

Once we had determined when to count, we needed to consider who to count. We knew that it was important to get a sense of how many individuals were in the building, but we also wanted to capture a sense of how they were grouped. Anecdotally, we had a strong sense that group studying was important, but we wanted to have a way to quantify the proportion of people who studied in groups and what size the groups tended to be. To capture both individual and group information, the assessment team determined that each time a building use count was done, there would need to be two individuals doing counts, with one focusing on individual use and behavior and one focusing on group size and behavior.

Another question that had to be answered in advance of data collection was what information we needed to record about what students were doing

in the library. Based on conversations with library administration and managers, we narrowed the focus to technology and furniture use. For each individual and group counted, a note was made of what type of furniture they were using (i.e., table, computer workstation, comfortable chair, or high table) and what type of technology they were using (i.e., library computer, laptop, both, or neither).

Finally, before counts could be done, the assessment team noted that there were different uses of the building based on location. The Dunbar Library is a four-story building that is set up for quiet study on the third and fourth floors and group work with fewer noise constraints on the first and second floors. Assessment team staff divided the library's second and third floors into zones, based on a variety of factors, including their intended use and actual noise levels.

The assessment team used Suma, an open source mobile tool developed by North Carolina State University Libraries. Suma is freely available software that is installed on a local server, run through a web browser, and works on mobile devices, making it easy to collect data. SUMA is a php-based application with a MySQL database. Once the initial questions about what type of information to collect about whom and when were decided, the assessment team worked with one of the library's web designers to set up the local Suma to be accessed on two iPads. The team conducted several trial runs with Suma during the fall semester in 2014 so that any issues could be addressed before the actual sampling began in spring 2015.

Data Source Two—Gate count

On the days that a building use count was being done, the circulation department also gathered hourly gate counts. The Dunbar Library has three public entrances, so information was collected about hourly traffic flows at each entrance. Because the three gates are bi-directional, gate traffic counts were used only to suggest building occupancy patterns, and not to draw conclusions about total building population at a given time.

Data Source Three—Whiteboards

While collecting data about building use through monitoring where students chose to sit and what technology they chose to use, the assessment team recognized that all the choices made by students were constrained by what was available to them in

the building. We chose to incorporate some guerilla assessment methods to get students' attention where they were. On the days that counting occurred, library staff also placed whiteboards strategically around the library. Each whiteboard offered a forced choice (two different chairs, for example, or a laptop and a library desktop computer). The pictures were taped to the upper-left and upper-right corners of the white board with the words "I prefer" in between and the word "VOTE" underneath that. The white boards were left otherwise empty, but for a suggestion to "tell us why" in the middle of the board. Students voted using hash marks and left comments about why they preferred one option over the other, and indicated when their preferences were stronger and when they were contingent on what the student was doing at the time.

Data Source Four—Questionnaires

In addition to the whiteboards, the assessment team also designed questionnaires to be distributed on tables and study carrels throughout the building every day that the building use counts were conducted. These questionnaires were left deliberately vague and open-ended. The three questions were introduced with a simple statement, "We're counting [on] your point of view. We plan to improve the library study spaces." The three questions were, "What would you change?"; "What do you wish the library had more of?"; and "What is important to you when choosing a study space?" The questionnaires were color-coded and tagged to indicate what zone it was from, so that we could ascertain whether there were patterns based on where people chose to sit in the building. Once collected, the questionnaire responses were coded and tagged by category.

There were 386 completed questionnaires over the collection time frame. Because these were readily available throughout the library and at service desks, these responses do not necessarily reflect 386 unique users. Moreover, because of their distribution within the library, these collected responses only from existing library users. These questionnaires gave us preliminary insights into students' priorities and helped us shape the more comprehensive needs assessment survey in phase two.

Data Source Five—Photographs

Many studies have used pictures from the same location at the same times of day to capture different use patterns in the library. The assessment team did

take photographs of the main atrium from the same spot during each Suma building count, but also chose to include pictorial evidence to demonstrate uses of the building that were not easily captured by other data collection methods. We asked staff conducting the building use counts to take pictures of anything that stood out either because it was unusual (e.g., a group of 17 students that had pulled together four tables to create a super-sized table) or because it was representative of what they typically saw on the building counts.

Data Source Six—Wi-Fi access and computer log-in data

Based on a high number of student responses on the questionnaires that indicated a dissatisfaction with Wi-Fi quality, the assessment team worked with the Library Computing Services department to gather information about the number of Wi-Fi access points, the strength of their respective signals compared to industry standards, and average seating occupancy for each zone as it corresponded with the Wi-Fi access points. Additionally, LabStats were collected for the study period to determine how many individual users logged into the library computers each day, when peak times of use occurred, and the average length of a computer session.

In the summer of 2015, the information from the building use study phase of the project was analyzed. The assessment team used the information they had captured from that phase to develop the next phase of the project.

Phase Two—Needs Assessment

Data Source Seven—Campus-wide student survey

The needs assessment that developed focused primarily on a survey of students. Because the focus was on the library building itself, services and collections were included only to the extent that they interacted with how people use the building. The survey design included 39 multiple choice, Likert scale, and open-ended questions. The survey, administered through Qualtrics, and with the help of Office of Institutional Research was sent to all Wright State University students in the first weeks of the fall 2015 semester. There were over 1,394 responses to the survey, over 1,300 of which were complete and valid. With a student population of 18,059 in AY 2015–2016, this surpassed the recommendation of collecting at least 1,008

responses to make inferences with a 95% confidence level and a 3% confidence interval.

The sample was relatively representative of the student population. Full-time students were slightly overrepresented in the sample (85% of respondents compared to 77% of all students), as were women (64% of survey respondents were women, compared to 52% of all students). To a lesser extent, there was a small level of overrepresentation of students living in campus housing, as well as graduate students. The various colleges across the university were well-represented, with the exception of the College of Engineering and Computer Science; only 9% of survey respondents were enrolled in CECS, compared with 21% of the total student population.

Open-ended responses were coded and tagged by category. Cross-tab analysis of close-ended questions was done using SPSS.

Findings

Overwhelmingly, the findings of this study make clear that the library as a place must accommodate a variety of uses. In addition to the number of ways the library is used, and the variation in responses to questions, students often used the word “diverse” to describe characteristics they wanted in the library. Throughout the project, it was apparent that the library is many things to many people. Students demonstrated a great deal of thought and consideration in responding to questions about their preferences; it was common for responses to begin with, “It depends.” The building could be improved to address the ways it does not currently meet all of these needs.

- Students primarily study alone. When they do study in groups, they tend to be in groups of 2–4 people. Group work is not necessarily social or active. Groups congregate on the quiet floors of the building and work together, often on different projects, to be near friends.
- When studying alone, students prefer to study at tables. While some students use study carrels for privacy, most students prefer studying at tables because they provide the space to spread out.
- Quiet is critical to studying. Some students report coming to the library to socialize with friends, but students overwhelmingly look for a quiet place to study. Students are frustrated by the lack of quiet. Students commented that the open access to the atrium limits the ability of the 3rd and 4th “quiet” floors to be truly quiet.

The lack of privacy or quiet spaces is a concern for students for both individual and group work. Many saw the need for individual and group study rooms.

- Students want to study at the library on Friday and Saturday evenings. A substantial portion of students report that the library's current closing time of 6:00 pm on Fridays and Saturdays does not meet their needs. This is particularly a problem for students who work or have other daytime commitments. Current weekend closing hours have led to a perception among some that the library is not interested in supporting non-traditional students.
- The physical structure matters to students when studying. Students identified a need for more restrooms, especially on the first floor; cleaner facilities; more comfortable furniture; and a more aesthetically pleasing environment in the library. There was also a concern that the existing layout does not meet student needs. The layout was perceived as a "hodgepodge" that made transitions between service points onerous.
- Nearly all people in the library use technology—either the library's computers or their own laptops or tablets. Students identified a need for more desktop computers and printers placed throughout the building, rather than in one learning commons area. The changing nature of technology since the building was opened also poses a problem: there is a critical shortage of access to outlets in the building. Given that 80% of students report using their own laptops in the library, this is a concern not just for access but also safety. Cords are commonly stretched across aisles to reach between outlets and seats.

The findings were used to make recommendations to library administration about revitalizing the library building as part of the strategic plan. A complete, 74-page report with detailed analysis was presented

to library administration, along with an executive summary. It is available at https://works.bepress.com/mandy_shannon/9/.

Practical Implications/Value

Using a wide variety of data sources allowed the assessment team to have a broad view of students' needs, use of the building, and perceived gaps between the two. This approach helped the assessment team and the library as a whole move from speculation about how the building should be revitalized to having a full picture of what student needs are, and to document that in a variety of ways.

In addition to collecting data from multiple sources, breaking the study into two phases allowed the campus-wide needs assessment survey to be more focused. By having done initial analysis on how the building is used, the assessment team was able to have a better sense of the types of questions to include on the survey.

Budget shortfalls across the university have put any plans to revitalize the building in a substantial way on hold, but library administration has been available for making decisions about the building from what furniture to buy to reconfiguring layouts. This report has also been used to demonstrate areas of need to the provost as well as a newly-formed committee on the Faculty Senate that focuses on the library of the future.

A large-scale building use and needs assessment study such as this is certainly a time-consuming, staff-intensive endeavor. Hundreds of staff hours were dedicated to this project over the course of 18 months. However, while it was very time consuming, the efforts resulted in a detailed, comprehensive report that is useful for both internal and external purposes.

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