

Beer Cans in the Stacks? Using a Photo Study to Reveal How Library Spaces are Used

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Georgetown University is a private research university, with an enrollment of approximately 8,000 undergraduate students and 9,000 graduate students. Its Main and Medical campuses occupy 104 acres within Washington, D.C., and so it is unsurprising that how campus space is used is a continual topic of discussion within the university community, including the Library. In 2009, the Library surveyed constituents on their use of the Lauinger Library, the main library on campus, in order to develop a master space plan. While the master plan does incorporate renovations of the main library, those renovations are not immediately forthcoming, and we will be limited to smaller changes to our heavily-used and overcrowded current building for the foreseeable future. To supplement the survey data and reveal what smaller changes might be most useful, library staff in the Research and Instruction Department conducted a photo study of two of the six floors of Lauinger Library during the Spring 2011 semester. The data collected in the photo study would both document the use of library spaces in their current configuration and provide evidence and inspiration to make small-scale changes to those configurations. While other libraries have used qualitative methods to document the use of space, a search of the literature reveals that we are only the second library to conduct this type of photo study.

Our study was heavily influenced by the photo study conducted by Kathleen Webb at the University of Dayton¹ although we also took inspiration from ethnographic studies at the University of Rochester² and Paradise Valley Community College.³ We bor-

rowed some methods of data collection and analysis from the University of Dayton photo study, but also expanded on it in terms of the number of spaces photographed and in adding the headcounts and behavior observations. In developing the photo study, we decided to focus on the second and third floors of Lauinger Library, as these floors are heavily used and have the largest study areas in the library. The second floor is open twenty-four hours most days during the academic year and features a large group study space with seating at both tables and at armchairs with coffee tables, as well as a quiet study area with individual carrels. The student-run coffee shop is also located on the second floor and has an adjacent “sidewalk cafe” that was recently renovated and now includes configurable tables and chairs with wheels. The print periodical collection surrounds these spaces. The third floor includes the reference and circulation desks, the reference stacks, computers reserved for Georgetown students, guest computers, and generally quiet study spaces with both tables and carrels. These sections of the third floor are not open twenty-four hours. The third floor also includes the Pierce Reading Room, which is open twenty-four hours on most days during the semester; it is designated as quiet study and has a mix of furnishings—lounge areas with armchairs and coffee tables, larger tables, and carrels. Pierce is also the location for recent copies of major newspapers.

Following the University of Dayton study, we decided to take photos of spaces hourly on random days during the Spring 2011 semester. Due to staff availability, we limited our time frame to the hours the

Circulation desk was open and our sampling to one day each week. We determined that we would not take photos of the carrels and public computers, as these photos would not be very informative and in the case of the carrels, would be difficult to take and very intrusive. We also decided to count the number of patrons in each space and note if they were engaging in specific behaviors, such as eating, using a laptop, or using library materials like books, journals, and newspapers. Because staff from three different departments—Research and Instruction, Access Services, and Collection Development—would eventually be involved in data collection, we created a paper form to standardize data collection and taped the floors in each area to indicate where photos should be taken from. Access Services agreed to be responsible for the earliest (8:30 a.m.) and latest (7:30 p.m. to 11:30 p.m.) rounds of the study, while Research and Instruction and Collection Development took responsibility for the remaining hours (9:30 a.m. to 6:30 p.m.).

Having Access Services staff take responsibility for conducting the study during the early and late hours in the day revealed both advantages and disadvantages to having such a busy department take part in an hourly study. Some of the disadvantages were related to Access Services being patron-oriented, so that a staff member scheduled to collect data may not have been able to leave the desk exactly on time if s/he was assisting a patron. This also occasionally occurred with Research and Instruction and Collection Development staff, who have frequent and sometimes not always scheduled research consultations. This led to some inconsistencies in what time the photos were taken, but rarely by more than ten minutes. However, the advantages of having so many staff members participate far outweighed the disadvantages; because Access Services was involved, we had the longest day possible for measuring, without staffing a full twenty-four hour day. Also, the same staff members could be consistently scheduled for the same hours on each sampling day, which reduced inconsistency because fewer people needed training in the data collection process.

In order to schedule Research and Instruction and Collection Development staff, we created a space on the staff wiki with a schedule that could be updated by individual librarians, as well as a link to the form and instructions for completing the form. Staff members were initially trained by members of the photo study

group and following that were then able to train other staff. Following data collection, each staff member input the data they collected into a Google Form that duplicated the paper form. Photos were downloaded from the camera the following day by the Head of Research and Instruction. The photo study group posted notices about the study on the second and third floors of the library and created a page on the library website with information about the study. The student newspaper, *The Hoya*, also eventually wrote a story about the study after speaking with members of the photo study group.

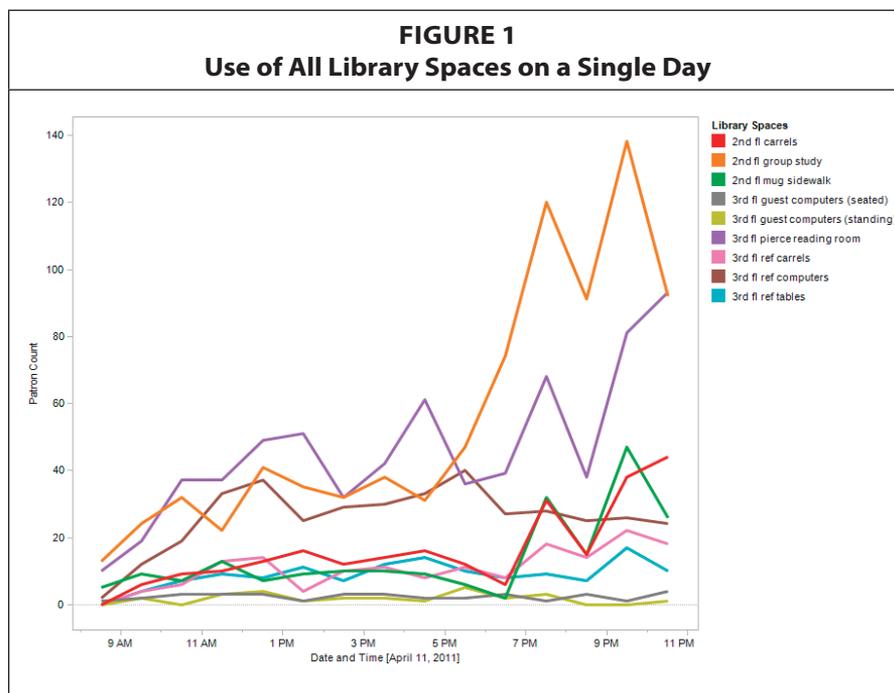
After requesting and receiving approval from Georgetown's Institutional Review Board, we began the photo study in February 2011. The first two dates were essentially test runs in order to determine how well the procedure worked and then we officially began the data collection. Because the test runs followed the same procedures, we did include them in our analysis of the data. There were occasionally challenges to data collection—the camera's batteries died on one day, staff members responsible for data collection were unexpectedly absent, and so on—but in general, the procedure ran fairly smoothly, particularly considering the number and diversity of staff involved. Ultimately, we counted the number of users in eight different spaces and took photos of five of those spaces. In the two largest spaces, the group study area on the second floor and the Pierce Reading Room on the third floor, we took multiple photos. We did this on ten days from the beginning of February to mid-May, on different days of the week.

In order to ready the data for analysis, each photo file was manually renamed to indicate the space, the day the photograph was taken, and the time. Much of this data was drawn from the individual photo's metadata, but the specific library space depicted obviously could not be. Once the photos were appropriately coded, we ordered them by date and time and then created an animated movie using iMovie so that usage trends would emerge. Because staff were responsible for inputting count and behavior data into the Google Form, much of that data was immediately ready for analysis; however, dates and times did have to be standardized and cleaned so that the data could be easily manipulated once it was in a spreadsheet. This data was input into Tableau Public, a freely available data visualization software, in order to create graphs that could then be analyzed.

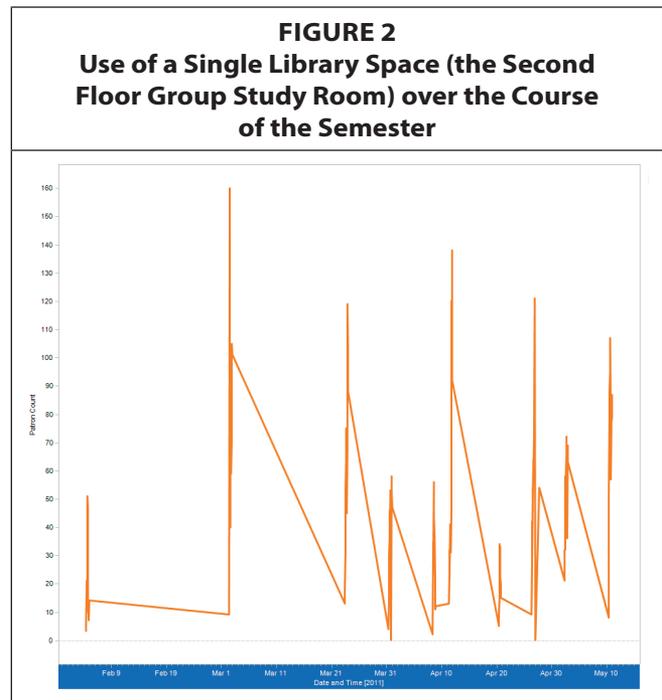
After the data were organized, we ended up with three different types of data. The photos resulted in eight videos of five different spaces; the group study area on the second floor was photographed from three different locations and so resulted in three movies, while the Pierce Reading Room was photographed from two different locations, resulting in two movies. We used the count data in several ways, some of them quite simple, but revealing. We counted the number of seats available in each area and compared that number to the usage during peak times (Table 1).

Area	Maximum Number of Seats	Peak Use Range
Second Floor Carrels	58 (40 carrels + 8 armchairs)	11–50
Second Floor Group Study Area	116 (72 chairs at tables + 44 armchairs)	51–160
Sidewalk Cafe	42 (chairs at tables)	15–47

We also used Tableau Public to analyze the count data in a more complex manner. We generated two different sets of graphs; the first set of ten graphs shows the number of users for each space on individual days throughout the semester (Figure 1).



The second set of nine graphs showed the number of users within a single space across the semester (Figure 2).



While the behavior observations and comments on the count form were interesting, they proved difficult to organize in any sort of way that would allow us to analyze them together. Moreover, much of the information is echoed in the photos and videos.

When thinking about how to approach the videos, we turned to qualitative methods of analysis. The photos are qualitative in nature and can be characterized as “naturalistic inquiry” and the sampling method as “purposeful.”⁴ That is, we selected specific spaces to observe because we decided the data from those spaces would be most useful to us. Qualitative data often demands inductive analysis, which “begins with specific observations and builds toward general patterns. Categories or dimension of analysis emerge from open-ended observations as the

inquirer comes to understand patterns that exist in the phenomenon being investigated.”⁵ In this form of analysis, “findings emerge out of the data, through the analyst’s interactions with the data;” data is described, ordered, and then theorized.⁶

Although the count data was quantitative in nature, our analysis of this data was similar in that we looked for patterns in the graphs. We approached the data holistically and considered the various types of data in relationship to each other. Three library staff members, including myself, watched and noted trends in the videos and analyzed both set of graphs individually, and then met as a group to discuss and refine our individual conclusions.

Numerous insights emerged from this collective analysis of our data. We gained evidence for some trends we had already observed anecdotally. For example, breaks and vacations play a significant role in the use of library spaces dominated by students. The day immediately before Spring Break was incredibly busy across those spaces, as Spring Break coincides with midterm exams and projects. The use of those spaces also drops considerably after 5 p.m. on Fridays. In contrast, use of the public computers was steady throughout the day and throughout the semester. We have also known that the second floor is primarily used for group study, that the third floor is used for individual study, and that there are not nearly enough outlets on either floor, and the data supports these observations, but we discovered uses of library spaces we were not previously aware of.

For example, there are numerous carrels on both the second and third floor and for most of the year, they are barely used. However, during finals week, they were heavily used; this may have been due to the high use of other seating or due to students desiring spaces in which there were no distractions. We also discovered that use is incredibly heavy at night, particularly in the second floor group study area and in the Pierce Reading Room, and it is in fact so heavy on the second floor that the headcounts were frequently higher than the number of available seats. An informal conversation with Facilities staff and the Access Services night supervisor revealed that chairs are frequently moved from floor to floor. The photos also revealed that the armchairs are very unpopular in both the second floor group study area and Pierce Reading Room. When they are used, they are used for napping and newspaper and book reading. The adjacent cof-

fee tables are not really used at all. Students will often avoid sitting next to each other, even in the group study area, unless they are specifically working in a group, which means that while there might be seating available, it is seating that no one will use. In contrast and much more efficiently, students working on their own in the “sidewalk cafe” area with the moveable seating will pull the tables apart, and groups up to ten people will move tables together in order to work together. Perhaps somewhat surprisingly, students use laptops far more frequently than mobile devices and they even use library materials—bound journals and books are piled or open on tables, often next to laptops. We also discovered from the count data that the number of computers on the third floor is sufficient for both public and university users, but that printing continues to be popular and that there were frequent lines at the print stations. Finally, and unsurprisingly, the photos confirmed that the food policy is consistently flouted on the third floor.

Although the library’s budget has not allowed us to make dramatic and costly changes, we have been able to address some of the issues raised by these data. Working with Library Information Technology, we were able to add three additional printers to the third floor reference computers and address the demand for printing. More significantly, due to the intense demand for study space and the consistent overcrowding of the second floor group study space, we heavily weeded our reference collection and then removed half of the reference stacks. This space was filled with chairs and table repurposed from other campus libraries, and it is consistently used. We have also requested funding for a metal screen that would allow the Circulation Desk to be locked up at night and would thus allow us to keep those spaces open twenty-four hours most days, thereby providing more study space and allowing students to use the reference computers and printers at any time. We would like to remove some of the carrels and armchairs, given their unpopularity, and replace them with flexible and moveable chairs and tables, which would really optimize the use of our limited space, but have not had the funds to do so thus far.

As at many college and university libraries, Lauinger Library at Georgetown University has become too small for the students it serves and the collections it houses; accordingly, we must continually look for ways to more effectively use the space within the

building to address our users' needs. Inspired by the photo and ethnographic studies of space use conducted by several other universities, we conducted our own photo study in order to gather data about how students use several of the most popular spaces in the library, with the hopes of eventually using that data to inform small-scale and quick changes to those spaces. These data reveals trends not found in survey or focus group data and even uncover uses of space we would not have thought to assess, and we have already begun using them to make small, but significant to our users, changes.

Notes

1. Kathleen M. Webb, Molly A. Schaller, Sawyer A. Hunley, "Measuring Library Space Use and Preferences: Charting a Path Toward Increased Engagement," *portal: Libraries & the Academy* 8, no. 4 (October 2008): 407-422.
2. Nancy Fried Foster and Susan L. Gibbons, *Studying Students: The Undergraduate Research Project at the University of Rochester*. (Chicago: Association of College and Research Libraries, 2007)
3. Paradise Valley Community College, "About PVCC Survey / Paradise Valley Community College Learning Spaces Survey," April 2007, http://www.flickr.com/people/pvcc_survey/
4. Michael Quinn Patton, *Qualitative Research & Evaluation Methods* (Thousand Oaks: Sage, 2002), 27.
5. *Ibid.*, 56.
6. *Ibid.*, 453.