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Location, Location, Location: Space Assessment in an Academic Library

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Abstract

This space assessment study was conducted in the Ida Jane Dacus Library at Winthrop University in Rock Hill, South Carolina, from February 1 to May 1, 2015. For this study two methods were employed to collect data. Beginning on January 28, and occurring at least twice every weekday, library floor plans were utilized to record not only the number of students but also where in the library they were working/studying. Concurrently, a short survey was created using the Qualtrics program, the purpose of which was to ascertain the factors (e.g. privacy, access to an outlet, etc…) determining where students chose to work and study in the library. During May 2015, these results were recorded into Excel spreadsheets to then be analyzed and studied. Details from this analysis are discussed in this article. Whereas there were no major surprises, the results did provide a number of useful recommendations.

Keywords

Location, Location, Location: Space Assessment in an Academic Library

By Phillip Hays and Susan Silverman

Introduction

The present library building on the campus of Winthrop University was dedicated on October 18, 1969, and named after Ida Jane Dacus, the first professionally-trained librarian in the state of South Carolina. Architecturally the building was a transition building, linking some of the more traditional structures on campus with the more modern buildings. This new library offered seating for 765 students, effectively tripling the seating capacity of the old Carnegie library. The building is approximately 100,000 square feet divided among three floors. The entrance to the library is on the middle floor.

During the spring and summer months of 2011, the University Archives and all of their collections were removed from Dacus Library and relocated to the Louise Pettus Archives and Special Collections in the old campus bookstore located on Cherry Road. Following the move, the Library Building Committee began meeting to discuss how best to use the space formerly used by Archives. In addition, the Committee began planning for a complete renovation of the main floor.

Dacus Library Building Survey

On September 15, 2010, a Dacus Library Building Survey was e-mailed to approximately 250 Winthrop faculty and staff. This survey was designed to ascertain what the faculty, staff, and administrators of Winthrop University considered to be the most pressing needs for the library. Results were tabulated on September 29. One hundred thirty-seven surveys were returned, 90 from faculty, 38 from staff and nine from administrators.

On September 16, 2010, a similar survey was e-mailed to 'All Students' at Winthrop University. Unfortunately the survey was buried in a daily email list of numerous campus events, and the response to the survey was minimal. Therefore, on October 5, 2010, the same survey was distributed in paper copy at the DiGiorgio Student Center. A total of 297 surveys were distributed and returned. The results of both surveys are listed in the table below.

Dacus Library Building Survey	
Student Responses	**Faculty / Staff Responses**
Most Important	
24 Hour Access to Study Area	Smarter Technology
Group Study & Meeting Rooms	Private Individual Study Areas
Private Individual Study Areas Student Café and Lounge	Group Study & Meeting Rooms Newer Furniture and Carpet
Smarter Technology Newer Furniture and Carpet	24 Hour Access to Study Area Student Café and Lounge
Least Important	

Based on these survey responses, the Building Committee submitted recommendations to the library and campus administration for a renovation plan. This was then used by an architectural firm to begin the renovation.

Renovation of the Main Floor

In the summer of 2012, the main floor of the library was closed to begin the renovations. Over the next months, the main floor was completely overhauled with the following improvements:

- Construction of an enclosure blocking access to the ground and second floor to enable 24 hour access to the main floor

- Construction of seven new group study rooms

- Construction of an Information Commons, combining reference and circulation in one area

- Updated restroom facilities

- An open floor plan

- All new furniture, including computer tables and chairs, study tables, and comfortable study areas

- New carpet and color scheme.

Current Project and Methodology

After the one million dollar renovation of the main floor, the library personnel were interested in reviewing and analyzing this new space and comparing its usage with that of the other two floors in the building. Recording the locations frequented by the library patrons represented the first phase of the project, and began during the spring semester, 2015. At least twice a day, Monday through Friday, from February 1 through May 1, library personnel would walk the floors recording the location of all patrons on all floors of the library. The categories of evaluation included the computer clusters (CC), comfortable seating (CS), group study rooms (GSR), large (LT) and small tables (ST), and individual study carrels (ISC). Each specific location within these categories received a reference code, for a total of 114 different study or work locations within the library. Library personnel recorded patron locations on a total of 168 sets of floor plans.

At the end of the semester in May, these results were recorded into Excel spreadsheets by date, day of week, and time of day. These spreadsheets have since been analyzed, studied, compared, and reviewed from different aspects.

Concurrent with this part of the project, a short Qualtrics survey was distributed to the students at the Information Commons requesting that they rank different requirements for their own study or work area in the library. This survey asked the students to "...rank from one to nine (where one represents 'most important' and nine represents 'least important') the factors that determine where [they] choose to study in the library:

- Privacy / Silence

- Access to an electrical outlet

- Near field of study

- Near friends

- Computer access

- Near a window

- Spot that allows you to spread out (i.e., a large table)

- Group study rooms

- Comfort (e.g., couch, armchairs)

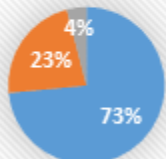| Survey Rankings #1 (most important) to #9 (least important)								
	#1	#2	#3	#4	#5	#6	#7	#8	#9
Access to outlet	17	34	21	14	13	8	6	0	1
Comfortable setting	8	5	13	23	16	10	13	10	14
Computer Access	21	27	12	15	16	10	8	5	0
Group study room	5	7	9	16	13	12	16	17	17
Large space or table	3	17	16	20	15	12	7	16	7
Near a window	4	3	4	5	8	19	23	24	23
Near field of study	2	5	13	7	14	22	20	12	19
Near friends	0	3	8	10	8	14	18	25	28
Privacy / silence	54	13	18	4	11	6	2	3	3

One hundred forty-eight surveys were completed. Based upon the results, the most important factors for determining a library location for work or study were privacy/silence, access to an electrical outlet and access to a computer.

Activity by Floor Comparison

A total of 11,600 patrons were recorded by library personnel during February, March, and April. The overwhelming majority (8,522) were located on the main floor. Whereas it was expected that the main floor - particularly after the major renovations - would be the heaviest used floor in the library, it was a little surprising to discover that there was not more usage of the second floor (2,607), particularly owing to the fact that most library patrons selected 'Privacy/Silence' as their primary library requirement.
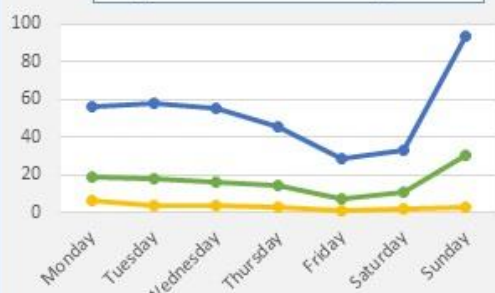
Main Floor Overview	
Improvements	· Over one million dollars spent on a complete renovation of the public area of the main floor · All new furniture · New carpet and paint · Updated restrooms · Vending machines · Seven group study rooms
Subject Areas & Special Features	· Reference Collection of over 11,800 volumes · MAC Lab · Three photocopiers (two black & white, one color) and three scanners · Textbooks and Course Reserves
General Statistics	· Patron Seats: 208 · Patron Computers: 52 · MAC Computers: 6 · Linux Computers: 4 · Patron Laptops: 20 · Group Study Rooms: 7 · Large Study Tables: 4 · Small Study Tables: 7 · Individual Study Carrel: 0 · Comfortable Seating Areas: 7

Analysis of Space Usage on the Main Floor

Before we began the actual recording of patron activity on the floor plans, we conducted an inventory of all the technology, furniture, rooms, and services on the three floors. We identified 42 study or work locations on the main floor. The inventory results are listed below.

Total Patrons by Floors

4%
23%
73%

Main Floor Second Floor Ground Floor

Usage by Time of Day Comparison

Second Floor Main Floor
Ground Floor

Day of the Week Comparison

Second Floor Main Floor Ground Floor

Computer Clusters

One desired outcome of the renovation was to produce a more open, free-flowing environment. The renovation created a very open environment. There are now 62 public computers on the main floor. The PCs are distributed throughout the floor in cluster groups of four computers per table, as illustrated in the picture. The MAC computers and the Linux computers are located in a small room in an alcove area. According to our study, the PCs are the most active area in the library.

Observations

The graph below provides the total usage for each computer cluster on the main floor. One of the more interesting observations from the usage of these computers was that the clusters (CC35, CC36, CC39, and CC40) located on the right side of the floor were used noticeably more than those on the left. Also, the counter-height tables were used less than the desk-height tables.

In addition to these computer clusters on the main floor, there is a separate MAC room housing six MAC computers and four
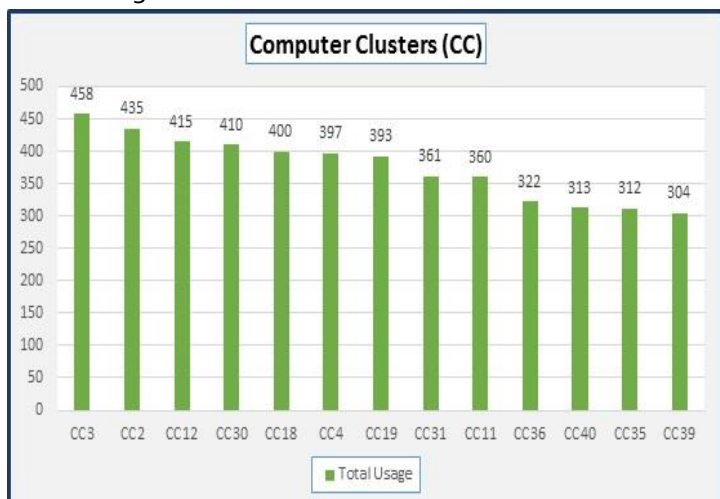
computers with the Linux platform. Overall these computers were used considerably less than the PC computer clusters; perhaps because this room is not readily noticeable when entering the building.

Recommendations

- All the MAC computers are housed in a separate room on the main floor with 3'o tables, whereas the PCs are on 4'o tables. The first recommendation for the MAC room would be to replace the 3'o tables with 4'o tables. The second would be to remove the non-load bearing wall to create a more visible and open environment.

- If the wall proves too costly to be removed, adding a neon sign above the door to the MAC Lab could potentially attract more usage.

- For any future purchase of computer tables, we would suggest desk-height tables rather than counter height.

Group Study Rooms

The renovation of the main floor included the creation of seven group study rooms. The largest room (GSR16) is equipped with a computer and a Smartboard, and will accommodate ten patrons. There are four rooms (GSR8, GSR15, GSR23, and GSR25) with white boards that comfortably accommodate 9 patrons. The last two rooms (GSR9 and GSR24) are called techno-booths. These techno-booths boast 35-inch LG HDTV monitors; up to six laptops

may be connected to these monitors, and patrons are allowed the option to toggle between each connected device.

Percentage of Occupancy Group Study Rooms - Main Floor

Legend:
- Empty
- 1 student
- 2 students
- 3 students
- 4 students
- 5 or more students

Percentage of Occupancy Group Study Rooms By Time of Day

Observations

The group study rooms are highly popular with the students and usage is pretty evenly distributed over the seven rooms. Because these rooms can each comfortably accommodate between six to ten students, we were interested in the percentage of time the rooms were being used by only one patron. This percentage ranged from a low of 17% to a high of 23%. Since all of the rooms are available on a first-come first-serve basis, it is difficult to discourage usage by only one patron. The rooms were rarely filled to capacity, which begs the question, "Are the rooms larger than is absolutely necessary?"
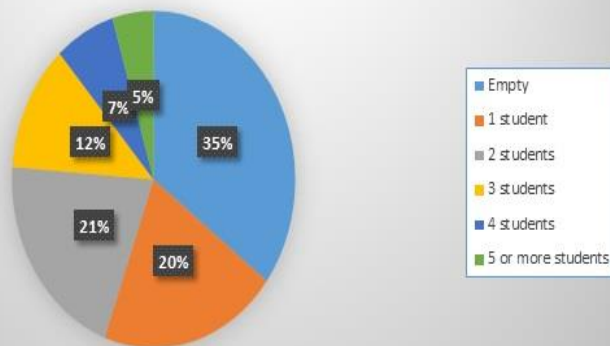
Recommendations

• To create a short informational flyer explaining all of the different group study rooms and the smaller study rooms available on the second floor.

• Some of the new chairs in the group study rooms should be moved to other locations on the main floor to increase usage.
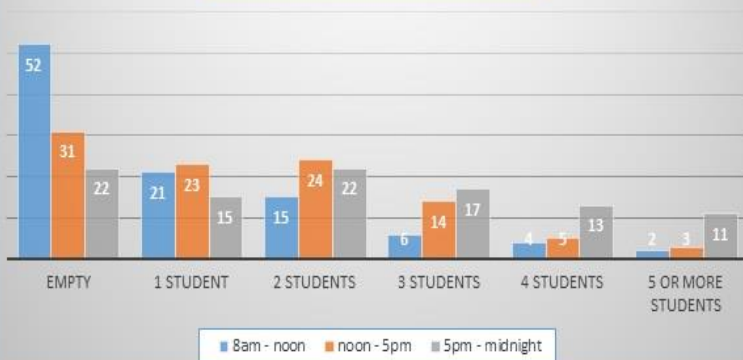
Large Work Tables

The four large tables on the main floor (LT13, LT29, LT32, and LT37) are all rectangular tables and they are all located near a computer cluster. Two (LT13 and LT32) are located very close to outlets; whereas the other two (LT29 and LT37) are not near an outlet.

Observations

The large table (LT32) with the highest usage is located toward the back of the floor near an outlet and next to a computer cluster with four computers. The table (LT 13) with the next highest usage is also close to a outlet and has computer clusters on three sides. Whereas the other two tables (LT37 and LT29) are near computer clusters they are not close to an outlet.
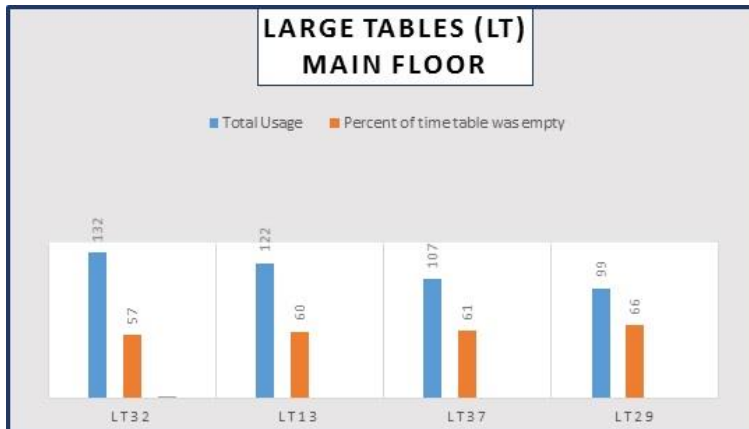
Recommendations:

- Wherever possible, provide extension cords and multi-plug surge protectors close to study tables.

Small Tables

There are six (ST7, ST10, ST14, ST17, ST21, and ST22) medium-size tables on the main floor. One (ST14) is rectangular and the other five are round. All tables are located near electrical outlets.

Observations

Of the six medium-size tables the one predominantly used was the rectangular table (ST14). One student commented that papers were less likely to fall off on the rectangular table. These tables are popular and are typically used by one to two patrons.
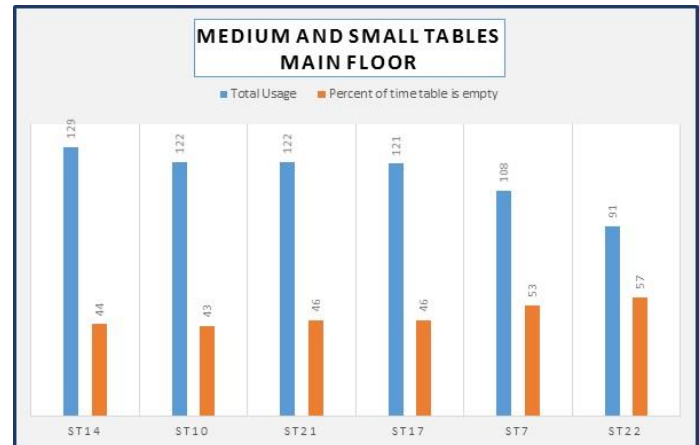
Recommendation

- This size table is frequently used by the students. The recommendation would be to have more rectangular tables.

Comfortable Seating

CS26 and CS27: Both units are popular for sitting, group work, and occasionally sleeping.

CS33: There are several of these types of comfortable seating areas on the main floor. They are primarily used by individual patrons reading the newspapers or studying.

CS38: This area located on the left side of the main floor was infrequently used.

CS1 and CS41: There are two areas as pictured above, located on either side of the Information Commons. Once again, the area on the right was used more (17) as opposed to the similar area on the left (7). Both seemed to be used as meeting places.

Observations

The comfortable seating areas seem to be appropriately distributed around the main floor. The areas are used for different and relevant purposes.

Recommendation

The only recommendation for these areas is to maintain the condition of the furniture and carpeting.

Distribution of Space Usage on the Main Floor

The main floor has always been the most heavily used area in the library. Our survey supported this observation with almost 75% of the students recorded working or studying on the main floor. As noted below 80% of those patrons were using one of the computers or were working in a group study room. The other 20% of the students were recorded at the small tables (9%), the comfortable seating areas (6%), or at one of the six large tables (5%).
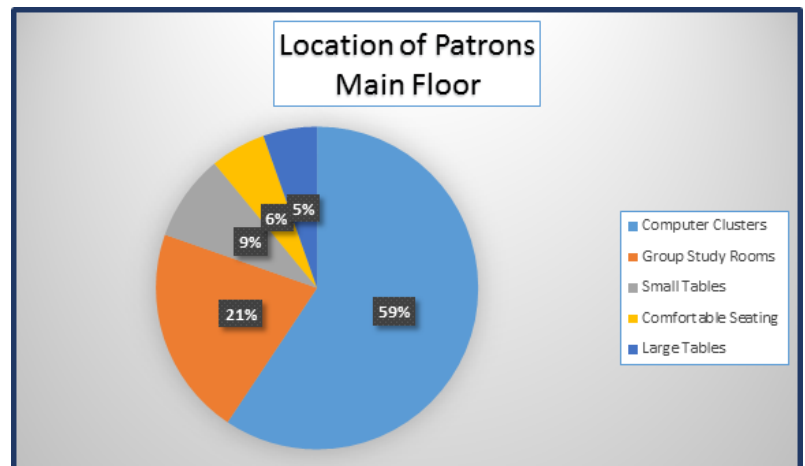
Analysis of Space Usage on the Second Floor

As with the main floor, before we began the actual recording of patron activity on the floor plans, we conducted an inventory of all the technology, furniture, rooms, and services on the second floor. We identified 51 study or work locations on this floor. The inventory results are listed below.

Floor Comparison	
Second Floor:	
Improvements	· Six small group study rooms opened for students on a first-come, first serve basis · Three rooms with desktop computers along the back wall · Three rooms with wireless connections and a dry erase board · Computer cluster of six computers in the back of the floor · Computer grouping of four computers in the front of the floor · Four groups of smaller tables added next to the windows · Large rectangular and round tables were distributed among the stacks
Subject Areas & Special Features	· Philosophy, Psychology & Religion, History, Sports, Dance, Music, Art, Sciences, Medicine, Agriculture and Technology · US Government Documents Collection · Music Library & Listening Lab · Oversize Collection
General Statistics	· Three rows with a total of 94 double-sided ranges, nine sections long, with six to seven shelves in each section · Ten double-sided ranges, six sections each, with five shelves in each section in the oversize area · Patron Seats: 166 · Patron Computers: 13 · Small Group Study Rooms: 6 · Large Study Tables: 25 · Small Study Tables: 4 groups · Individual Study Carrel: 23 · Comfortable Study Area: 1

Second Floor

Of the 11,600 patrons recorded during this study, only 2,607 were working on the second floor. From this group the greatest number of patrons were using the large study tables. The six small group study rooms were the next most popular area. Due to their popularity, these two areas were selected for further review, and are discussed below.

Large Tables

There are a total of 25 large tables on the second floor; 20% of these are round tables. After reviewing the statistics, the main points for patron selection were location along the sides of the second floor next to a window and close to an electrical outlet.


An interior table without an outlet

A large table next to a window and near an outlet.

Observations

Over half of the usage of the large tables were for the tables next to a window and close to an outlet. The more secluded interior large tables without access to an outlet were only occupied 19% of the time. The original design for the building required that the majority of the columns in the building would be wired. Unfortunately the book ranges are located next to the columns and the majority cover the outlets on the columns.
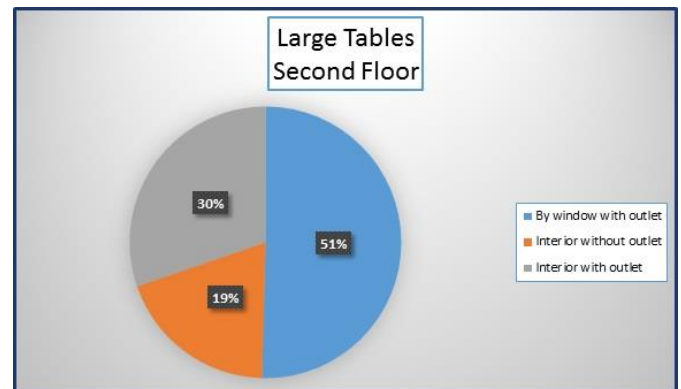
Recommendations

Investigate moving the outlet to an exposed side of the columns located near interior tables or carrels.

Group Study Rooms

There are six small group study rooms (large enough for one to two people) available for patron usage on the second floor. Three of the rooms are located along the front of the building overlooking the main street through campus. They are equipped with WiFi and small white boards. The other three rooms are located on the back of the building overlooking the grounds behind the library building. These rooms are furnished with a desktop computer.

A small group study room with WiFi and a white board.

A small group study room with a desktop computer.

two open study rooms are moved to a more private location.

- Attach the white boards to the interior window.

- All six carrels should be cleaned and repainted.

Distribution of Space Usage on the Second Floor

Interestingly, whereas the computer clusters (59%) and the group study rooms (21%) were the most popular areas on the main floor, the large tables (40%) and the small group study rooms (24%) were the most used areas on the second floor. During the period of this study the students were required to return to the main floor to pick up any items printed. A printer has now been placed upstairs alleviating this issue.
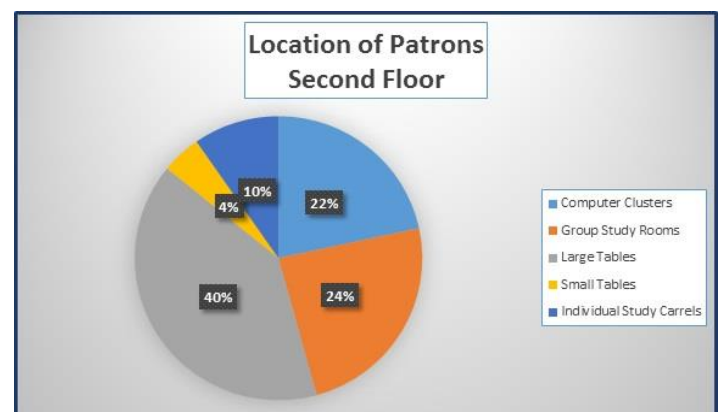
Observations

The group study rooms located along the back of the building were occupied 64% of the time; whereas the group study rooms located on the front and without a computer were occupied only 36% of the time.
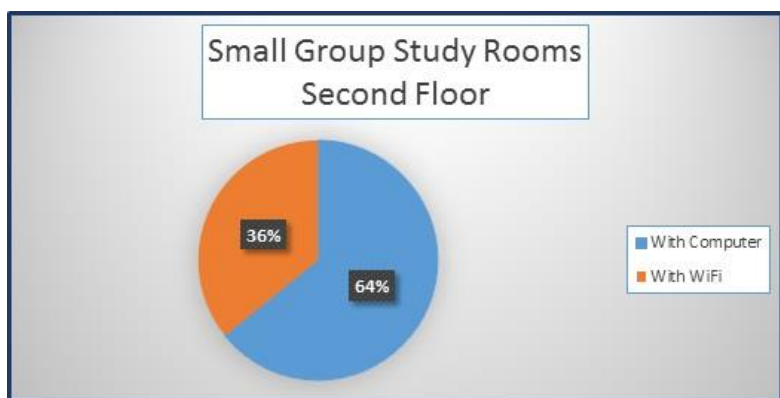
Recommendations

- Include a desktop computer in all six study rooms.

- Likely due to the distractions of library patrons walking up and down the main stairwell, the two study rooms at the top of the stairwell were used the least amount of time. Taking this into account, it is recommended that these
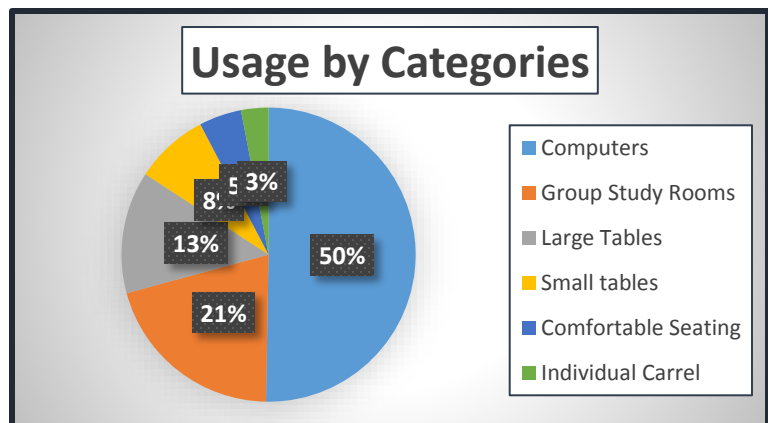
It is the Little Things

The results from this study corroborated many of our own observations. We were not surprised that the overwhelming majority of the patrons stayed on the newly-renovated main floor, where they enjoy easily accessible computers,

group study rooms, and comfortable study areas. We did, however, expect more patrons would have preferred the larger study tables and more intimate group study rooms on the second floor. Whereas we expected the computers to be the most popular commodity for the students, we were surprised about the preference for the computers on the right side of the floor as opposed to those on the left. We were also slightly surprised about the preference for the desk-height computer tables as opposed to the counter-height tables.

We knew the group study rooms were very popular but were a little concerned that, on average, the large rooms were occupied by only one student 20% of the time. We knew the small group study rooms on the second floor were also very popular, but were a little surprised that the ones that included a computer were overwhelmingly more popular than the ones without a computer.

We were not surprised by the importance of a nearby outlet or surge protector, but did not realize the preference for a rectangular table as opposed to the round tables.

In each section, we have made recommendations to improve the study areas throughout the library. We hope that with relatively minor changes to the second and ground floors, we are able to entice some students away from the main floor.

Usage by Categories

- Computers — 50%
- Group Study Rooms — 21%
- Large Tables — 13%
- Small tables — 8%
- Comfortable Seating — 5%
- Individual Carrel — 3%

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