

# Library Renovations and Student Behaviors: A Longitudinal Case Study

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Many academic libraries renovate physical spaces to address the needs of the 21st century learner. This study presents the assessment tools used to evaluate the use of space prior to a branch library renovation as well as results of two post-renovation assessments to examine the success of the project. The pre-renovation survey showed that library users desired extended hours of operation, better furniture, more power outlets, more private and group study spaces, better lighting, and more comfort. Both post-renovation survey results indicated an increase in satisfaction of all areas except access to food options and hours of operation.

The Education Library at the University of Florida had not been renovated since opening in 1980. A renovation was necessary in order to address the evolving needs of the 21st century learner. In 2017, the Education Library received funding for an approximately \$4 million renovation. The renovation, which occurred during the entire 2018 Spring Semester, included the incorporation of new innovative learning spaces geared towards the needs of today's students in addition to changes to update an outdated building. The learning spaces included the addition of an emerging technologies makerspace, a computer lab, additional public computers, and group study rooms which feature AirMedia wireless presentation technology. Improvements to the building itself focused on providing a better learning environment for students and included the addition of LED lighting, ADA features, a lactation room, an increase in electrical outlets and seats, and a wide variety of new furniture.

The Education Library is located within the College of Education (COE). The most recent data shows that the COE serves nearly 6,000 students, and more than 200 full-time staff and faculty members (University of Florida, 2018), and the building is open an average of 77 hours per week during the Spring and Fall semesters. The building is in close proximity to many student apartments and Greek Life housing. Since this area is located about 0.7 miles away from the main campus library and separated by a busy city street,

the Education Library serves as the primary library for many of these students in addition to serving the COE.

## Literature Review

Numerous articles describe the evaluation of library space and usage. These articles use a variety of assessment methods that work to uncover student behaviors and perceptions of libraries and their space. In many cases, the results help to plan for changes to the space or full renovations. For this literature review, the authors analyzed articles that describe assessments used to plan for academic library renovations or assess the success of a library renovation. The most common assessment methods were patron surveys or questionnaires, observations, interviews, photography, case studies, focus groups, and ethnographic approaches. Many researchers used a combination of these approaches in mixed-methods assessments.

### *Patron Surveys*

One of the most frequently used assessment approaches, library patron surveys, often helps librarians evaluate self-reported space use, patron opinions and perceptions of library designs, and identify suggested improvements. Survey data can help librarians plan for a renovation or assess the effectiveness of a renovation. Surveys are often included as part of a mixed-methods approach (Shill & Tonner, 2004; Yoo-Lee, Heon Lee, & Velez, 2013; Aronoff, 2016; and Saragossi et al., 2020).

### *Observations*

Observations of library patrons are conducted to evaluate library use in real time. Observations can be done directly with patron awareness or unobtrusively and assess patron

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preferences, engagement, needs, and usage. Many studies that assess academic libraries through observations are most interested in student behaviors and the usage of library spaces (O'Kelly et al., 2017; Tewell et al., 2017; May & Swabey, 2015; Oliveira, 2016; Holder & Lange, 2014; Archambault & Justice, 2017; Fox & Doshi, 2013; and Asher, 2017).

### *Case studies*

A case study is "an in-depth analysis of a bounded system" (Merriam, 2009, p. 38). Case studies can be used to determine what may happen in a similar situation. Case studies have been used to collect data about students' space usage and behavior patterns (Ferria et al., 2017), to plan for a library renovation (Mix, 2012), and to assess information commons users (Somerville & Brar, 2010; Sullivan, 2010). While assessment of library spaces and library space usage can be done in a number of ways, the extent to which it accurately reflects patron needs will determine how well libraries are able to support their users.

## Methods

The aim of this study is to discover the impact a library renovation has on patron satisfaction and library behavior. We define library behaviors as usage of library materials, computers, and space. This study spans from Fall 2016 to Spring 2020. This four-year longitudinal study consisted of a series of online surveys, an analysis of gate counts, study room usage, circulation numbers, and public computer usage. The differences of patron satisfaction and usage as a result of the renovation were examined in the hopes of learning what students and faculty researchers want and need from the physical learning spaces within the Education Library.

### *Library Usage Data*

The usage data includes information from the 2016-2017 academic year (AY) through the 2019-2020 AY for the following: public computer usage, group study rooms, gate counts, and collection checkouts. The renovation led to an increase in public computers from 18 to 44 and an increase in group study rooms from 5 to 7. The Education Library collections consists of approximately 70,000 volumes including: Course Reserves, the Children's and Young Adult Literature Collection, Journals, PreK-12 Textbooks, and the General Education Collection. These materials are available to university affiliates for checkout. During the renovation, however, only a small selection of course related books and journals were made available for checkout at the main campus library. Checkout data was collected for all of these library components.

### *Survey Data*

Qualtrics online survey software was used to create the pre-renovation, immediate post-renovation, and one-year post-renovation surveys. From this point forward, these surveys will be described as 2017 (pre-renovation), 2018 (immediate post-renovation), and 2019 (one-year post-renovation). The surveys were advertised via COE listservs, social media, signs and table tents placed around the library, and by word-of-mouth. All marketing for the surveys indicated that every 20th participant who submitted a completed survey would receive a \$15 gift certificate up to 20 recipients.

Survey responses include multiple choice, ranking, and open-ended questions. The 2017 survey collected participant information such as status at university, college, and primary place of residence, awareness of the library, use frequency, use of specific features, satisfaction with and importance of these features, and intended future use of the library (See Appendix A). The 2018 survey was changed to account for new features and the length of time the library was open after the renovation (See Appendix B). The 2019 survey reverted to the scales used in the 2017 survey but still asked about the new features (See Appendix C).

## Results

Findings are presented for both library usage data and survey data which assessed similar elements. The library usage data section includes gate counts, library material checkouts, group study room reservations, and public computer usage. The survey data section includes survey participant responses regarding demographics, library usage, library materials, group study rooms, public computer usage, and open-ended question and satisfaction responses.

### *Library Usage Data*

#### **Gate Counts**

Library gate counts, as seen in Table 1, cover the first day of Fall semester to the last day of Spring semester. The 2017-2018 AY predictably saw a huge decrease as the library was closed for the entire Spring semester for the renovation. After the renovation, the gate counts show a 16% increase from the 2016-2017 AY to the 2018-2019 AY. Using the weekly gate count average as a trend, it is estimated that the Spring 2020 gate count would have been approximately 73,000, an increase of 27%.

As the Education Library is located within one of the buildings that makes up the COE, the library's gate counts are affected in part by the number of classes offered in the COE. In the 2018-2019 AY the COE underwent its own major renovation. As a result, most classes that were typically held

LIBRARY RENOVATIONS AND STUDENT BEHAVIORS

<b>Table 1. Education Library Gate Counts</b>								
	Fall 2016	Spring 2017	Fall 2017	Spring 2018*	Fall 2018	Spring 2019	Fall 2019	Spring 2020**
Education Library Gate Counts	53,094	50,111	34,661	0	63,374	57,296	53,458	44,555
Note. *Library closed due to renovations.								
Note. **Represents shortened 10-week semester due to COVID-19 campus closure								

<b>Table 2. COE Courses Offerings Compared to Education Library Gate Counts</b>						
	Fall 2017	Spring 2018*	Fall 2018**	Spring 2019**	Fall 2019	Spring 2020***
Courses Offered in COE Buildings	317	242	82	65	188	253
Education Library Gate Counts	34,661	0	63,374	57,296	53,458	44,555
Note. *Library closed due to renovations.						
Note. **COE buildings closed due to renovations.						
Note. ***Represents shortened 10-week semester due to COVID-19 campus closure.						

in the COE were held either in other classrooms on campus or online. Course offerings physically taking place in the COE dropped 73% between the 2017-2018 AY and the 2018-2019 AY as a result of the closure for the renovation. Table 2 details the courses offered during the 2017-2018, 2018-2019, and 2019-2020 AYs. During the Fall 2018 semester ten credit-bearing classes were held in the Education Library classroom. Once the COE reopened after the completion of construction the course offerings in the COE rose and in Spring 2020 offerings were back to pre-renovation levels.

Upon re-opening for the Fall 2018 semester, the Education Library experienced a 55% increase in gate counts, which included visitors coming in to view the newly renovated space. While the library gate counts decreased in the Spring 2019 semester during the second semester of the COE renovations, library traffic remained 12% higher than the Spring 2017 semester. Similarly, although gate counts decreased in Fall 2019, library traffic was still higher than pre-renovation numbers. The decrease in the Spring 2020 semester gate count can be accounted for by the fact that the library closed to the public two months before the end of the semester as classes moved online due to COVID-19.

**Library Materials**

Library materials include books from the General Education Collection, the Children’s and Young Adult collection, the PreK-12 Textbook collection, and print and online Course Reserves, and print journals. Table 3 presents circulation data for AYs 2016-2020 by Fall and Spring semesters. For the first three years, data showed a decrease in circulation in all material formats except for online Course Reserves. However, in the Fall 2019 and Spring 2020 semesters there was an increase in circulation of General Collection print materials.

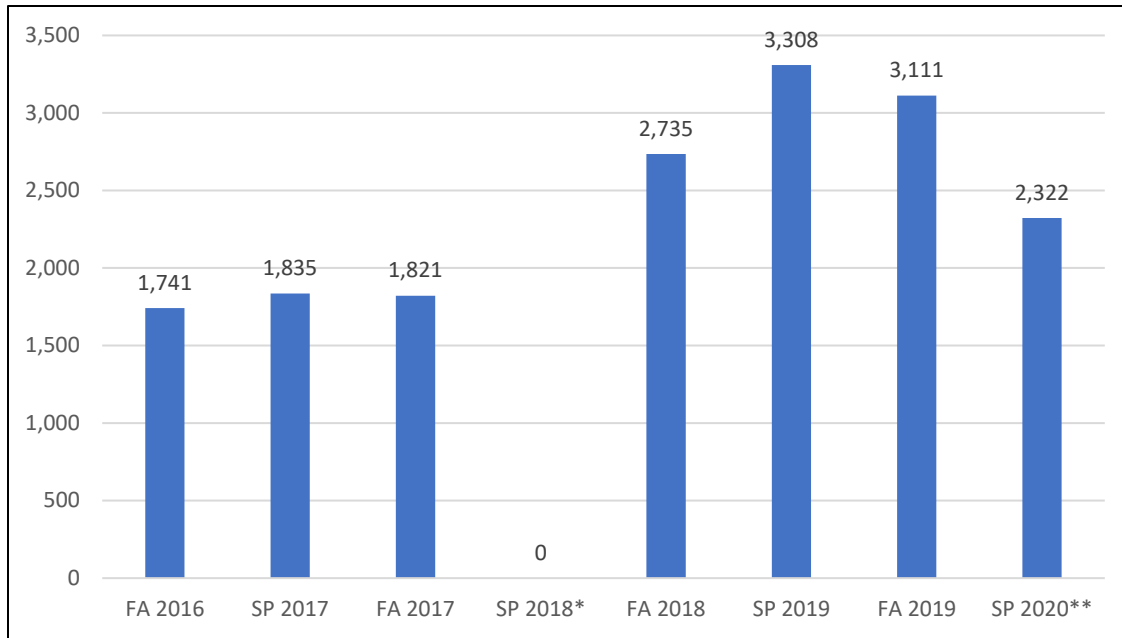
**Group Study Rooms**

Since group study rooms have become an important feature in libraries, two additional group study rooms were added during the renovation, increasing to seven total. Each study room can fit 6-8 people and can be reserved online. Figure 1 displays the total number of reservations for all available study rooms. Reservations increased 69% from the 2016-2017 AY compared to the 2018-2019 AY. The two new study rooms were reserved 1,189 times in the 2018-2019 AY (See Appendix D for location of study rooms). Study room reservations continued to increase in 2019 from the previous year. Using the weekly group study room reservation average as a trend, it is estimated that the Spring 2020 reservations would have been approximately 3,818 had the library remained opened through the end of the semester

**Public Computers**

The number of public computers in the Education Library increased from 18 to 44 after the renovation. Figure 2 shows that in 2017 there were 55 sessions per computer (Number of Sessions/Workstations n=997/18) and immediately after reopening this increased to 100 sessions per computer (Number of Sessions/Workstations n=4423/44). Although the Spring 2020 semester moved online in March 2020, the application launches already displayed a 33% increase from the previous semester. Using the below data to estimate trends, it is projected that the Spring 2020 computer usage would have been approximately 124 sessions per computer (Number of Sessions/Workstations n=5,447/44) and the application launches would have been approximately 35,936.

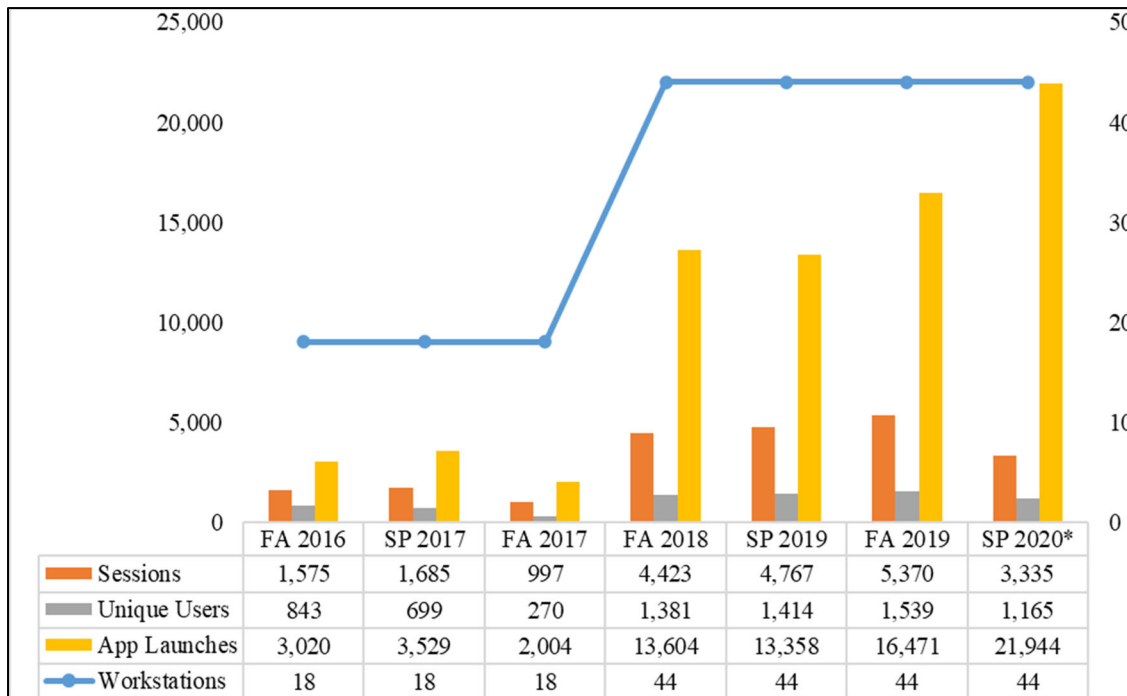
Figure 1. Group Study Room Reservations by Semester



Note. \*Library closed due to renovations.

Note. \*\*Represents shortened 10 week semester due to COVID-19 campus closure.

Figure 2. Public Computer Usage



Note. Sessions - any time a user logs in

Note. Unique Users - any time a unique UFID logs in

Note. Applications - any program launched by a user, i.e. student launches Google Chrome, Adobe Acrobat, and Microsoft Word--this would count as 3 application launches

Note. \*Spring 2020 semester moved online on March 19, 2020 due to the COVID-19 Pandemic.

	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Spring 2017	Spring 2018*	Spring 2019	Spring 2020**
Course Reserves (print)	960	634	343	279	858	268	352	289
Course Reserves (online)	222	200	291	366	155	353	509	411
General Collection (print)	1302	953	707	1898	1070	50	617	1374
Children's/YA (print)	1754	1603	963	1037	835	14	452	671
K-12 Textbooks (print)	30	46	11	110	12	0	32	27
Journals (print)	30	63	10	14	26	0	11	0
<b>Total</b>	<b>4076</b>	<b>3299</b>	<b>2034</b>	<b>3704</b>	<b>2801</b>	<b>332</b>	<b>1464</b>	<b>2772</b>

Note. \*Library closed due to renovations.  
 Note. \*\*Represents shortened 10-week semester due to COVID-19 campus closure.

### Survey Data

Data from the Qualtrics surveys from the pre-renovation (2017), immediate post-renovation (2018), and one-year post-renovation (2019) were compiled in similar groups to the library usage data for comparison.

### Demographic Data

The number of survey participants increased from the 2017 (n=565) survey to the 2018 (n=722) survey and decreased slightly for the 2019 (n=693) survey (see Figure 3).

The number of undergraduates that completed the survey increased from 50% of survey participants in the 2017 survey to 88% in the 2019 survey. The number of graduate students completing the survey decreased from 43% in the 2017 survey to 10% in the 2019 survey. Staff, Faculty, Alumni, and Other are grouped together in Figure 4. About the same number of participants from these groups took the surveys given in 2017 and 2018, then decreased in 2019.

The surveys also asked participants for their college. In the 2017 survey 52% (n=325) of survey participants indicated education as their college, compared to 27% (n=202) in the 2018 survey. This number decreased in the 2019 survey to only 14% (n=99) of participants.

Figure 5 displays the variety of colleges represented by survey participants who indicated that they use the Education Library. In the 2017 survey, the college with the highest number of patrons was the COE 58% (n=325). But even with its distance from the middle of campus, the Education Library still drew strongly from Liberal Arts and Sciences 11% (n=62), Business 9% (n=52), and Engineering 9% (n=52).

In the 2018 survey, patrons from the COE were again the highest 28% (n=202), however, this was a 38% decrease from the 2017 survey. Business at 19% (n=134) saw an increase of

61%. Liberal Arts and Sciences made up 13% (n=97) and Engineering 11% (n=78) of survey participants.

The 2019 survey returned interesting results. The two colleges with the highest number of participants were Business 17% (n=115) and Liberal Arts and Science 17% (n=115) with Education following with 14% (n=99) of participants and Engineering with 13% (n=88).

	Very Frequent	Frequent	Seldom	Never
2017 (n=565)	11%	43%	41%	5%
2018 (n=722)	34%	27%	33%	6%
2019 (n=693)	13%	40%	39%	8%

### Self-Reported Library Usage

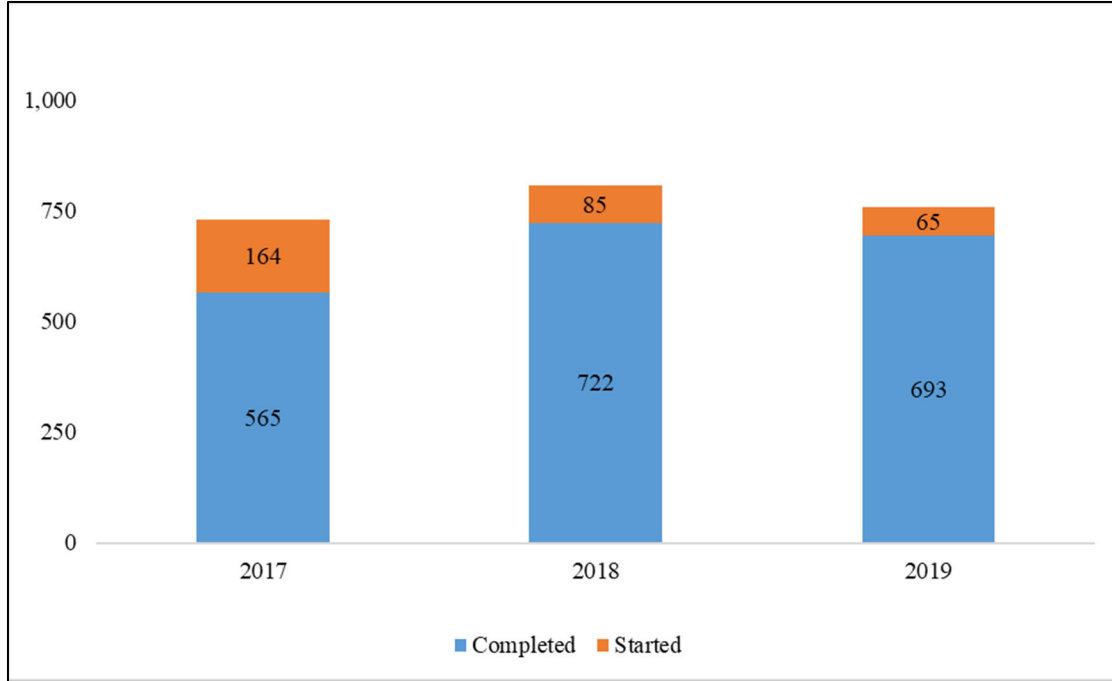
While the frequency of library usage was examined in all three surveys, the month-long 2018 survey was distributed just 7 weeks after the library reopened post-renovation. Table 4 shows an increase in patrons who reported "Very Frequent" use of the Education Library, from 11% in the 2017 survey to 34% in the 2018; those who reported using the library frequently or seldom decreased.

The results from the 2019 survey demonstrate a return to pre-renovation usage of the library similar to the 2017 results but still show a modest increase in the number of very frequent users from 11% in 2017 to 13% in 2019. Those that never use the Education Library remained about the same.

### Self-Reported Use of Library Materials.

To further evaluate patron use of library materials, survey participants were asked how frequently they check out library materials and how important the library collection is for them. Table 5 shows a decrease in self-reported library usage, with most participants responding that they seldom or never check out materials.

Figure 3. Survey participants



Note. Number of participants that started versus completed the survey.

Figure 4. University Status of Survey Participants

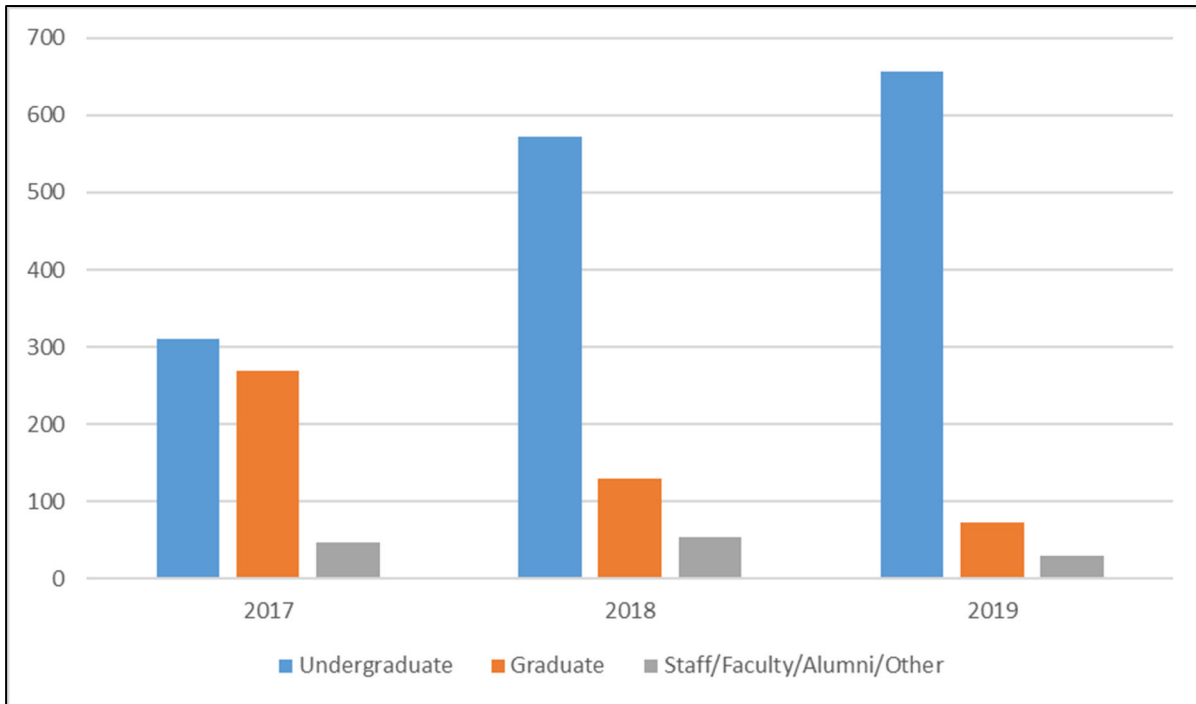


Figure 5. College, Self-reported

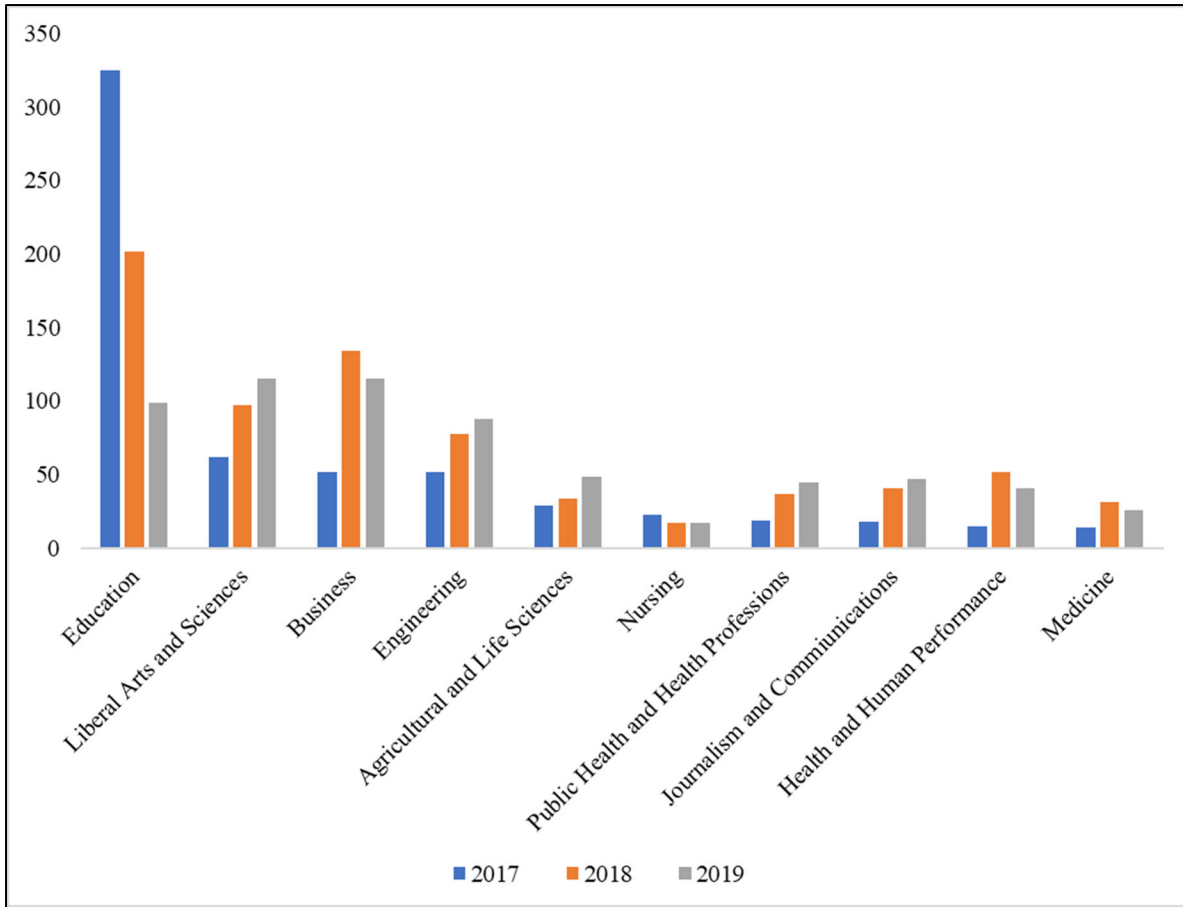
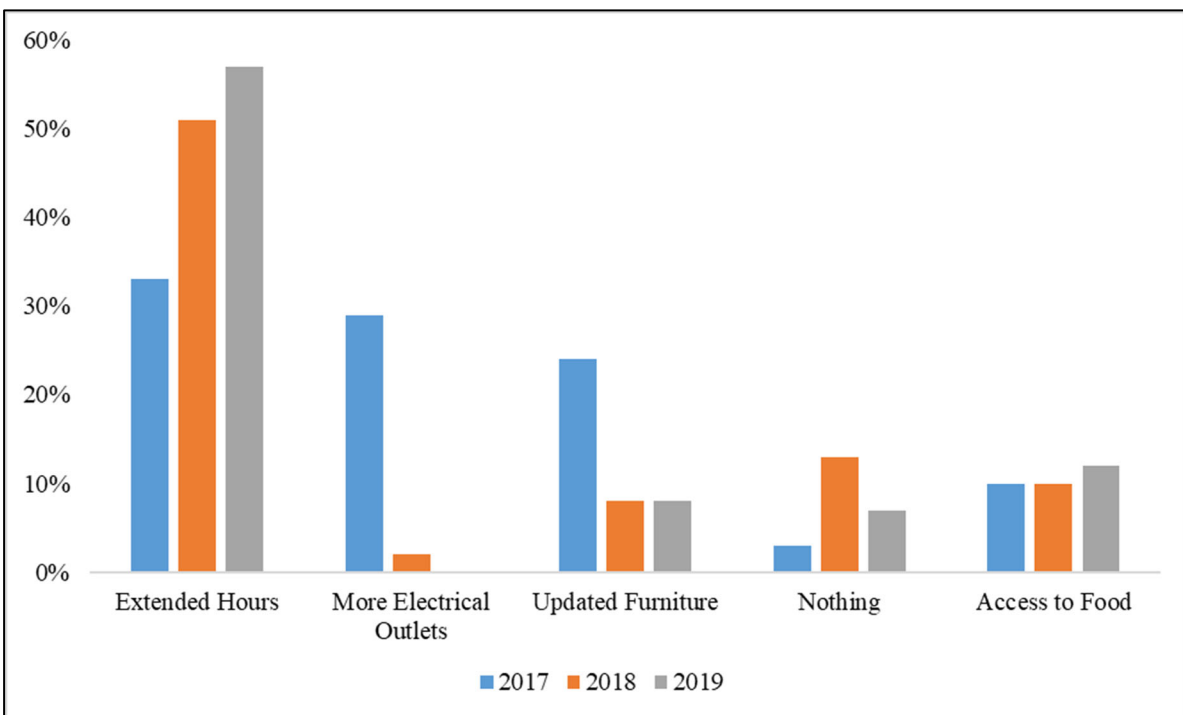


Figure 6. Open-Ended Survey Suggestions to Improving the Education Library



**Table 5. Library Material Checkouts, Self-Reported**

	Very Frequent	Frequent	Seldom	Never
2017 (n=565)	<1%	4%	37%	59%
2018 (n=722)	1%	3%	10%	86%
2019 (n=693)	<1%	2%	15%	83%

In the 2017 survey, 13% (n=74) of participants ranked checking out materials as the most important use of the Education Library but this decreased to 7% (n=50) in the 2018 survey and down to 6% (n=38) in 2019.

Additionally, open-ended survey questions yielded suggestions for library materials improvement. Of the fifteen total open-text responses, participants indicated the need for “a better children’s section,” an overall increase in books including textbooks, more Course Reserves, DVD loans, and greater access to archives. In the subsequent years, respondents continued to request an improvement of the children’s collection but also added the need for better signage and finding aids for locating books on shelves and requested specific materials such as counseling monographs and teacher education journals.

#### Group Study Rooms

In the 2017 survey, 5% (n=28) of survey participants ranked group study rooms the most important feature of the Education Library. In the 2018 survey, only 3% (n=22) of survey participants ranked them as most important, while in 2019 this increased to 4% (n=27).

When asked on the 2017 survey what participants felt would make the Education Library better, participants mentioned group study rooms 16 times. Thirteen survey participants reported that they wanted more rooms, three participants felt updates or new furniture was needed in the rooms, and one respondent mentioned that the study rooms should be soundproof. The 2018 survey also gathered 16 responses, with seven indicating a need for more group study rooms and four respondents indicating a desire for the rooms to be soundproof. However, in 2018, there was no mention of the rooms needing any updates or new furniture. The 2019 survey participants mentioned group study rooms 14 times. Three respondents stated the rooms needed soundproofing, three said there should be more rooms, and three specifically mentioned having better directions to the upstairs rooms.

#### Public Computer Usage

As part of the 2018 survey, participants were asked how satisfied or dissatisfied they were with the new computer lab, out of 727 responses, 51% (n=373) said they were satisfied with the new computer lab, 19% (n=141) indicated

they were neither satisfied nor dissatisfied, <1% (n=2) said they were dissatisfied, and 29% (n=211) indicated this question as not applicable. In the 2019 survey, 629 participants responded to a slightly modified question that did not include a “Not Applicable” option about satisfaction with the computer lab, 63% (n=397) reported being satisfied, 35% (n=218) were neither satisfied nor dissatisfied, and 2% (n=14) were dissatisfied.

When asked to rank aspects of library use in order of importance 7% (n=38) participants ranked “library computers” as the most important use of the Education Library in the 2017 survey while in the 2018 survey only 1% (n=9) of participants ranked it as most important. In the 2019 survey this number increased to 2% (n=15) of participants.

#### What Would Make the Education Library Better?

Some of the richest data was found in the survey participants’ answers to the open-ended question about what would make the Education Library better. In Figure 6, the top five responses from the three surveys are shown.

In comparing all three surveys, the top five consistent responses were hours of operation, availability of electrical outlets, furniture, nothing, and access to food options. The number of participants that mentioned an increase in the hours of operation continually rose each year. In each consecutive survey, a decrease was seen in the number of responses regarding the availability of electrical outlets. The number of participants that mentioned furniture decreased between 2017 and 2018 and then remained the same for 2019. Participants who reported nothing would make the Education Library better increased from 2017 to 2018 and slightly decreased in 2019. Responses about access to food options were similar between all three surveys.

#### Satisfaction

The final data point collected was in regard to the satisfaction with the library before, after, and one-year post-renovation. Survey participants were asked the question, “Thinking about your in-person visits to the Education Library, how satisfied or dissatisfied are you with the following?” Different library features were evaluated on a Likert scale. The 2017 survey asked about 11 features of the Education Library. The 2018 survey expanded to include new features from the renovation, including the group study rooms, accessible restrooms, lactation room, and computer lab. In the 2019 survey, these 15 features were evaluated again.

Prior to the renovation, the three features that 2017 participants were the most dissatisfied with were the hours of operation (43%), furniture (32%), and outlets (32%). The renovation was unable to address the hours of operation, but



post-renovation participant satisfaction with the number of outlets and the furniture increased. In 2018, participants reported high satisfaction with lighting (97%), furniture (96%), and cleanliness (95%) and in 2019 with outlets (95%), lighting (95%), and furniture (95%). Hours of operation remained the feature that participants reported the highest dissatisfaction with in 2018 (40%) and 2019 (43%). The three new features added to the library through the renovation were assessed separately in the 2018 survey. The results showed participant satisfaction with all three new features: accessible restrooms 77% (n=557) satisfied vs. 2% (n=13) dissatisfied, lactation room 26% (n=190) satisfied vs. <1% (n=1) dissatisfied, and computer lab 51% (n=373) satisfied vs. <1% (n=2) dissatisfied.

## Discussion

### *Library Use Expands Beyond the College of Education*

Self-reported survey data, as well as existing gate counts, indicate an increase in library usage post-renovation. Through the 2018-2019 and 2019-2020 AYs the Education Library saw an increase in the number of patrons coming through the doors as well as an increase in the number of patrons from colleges outside the COE. The increase in participants not affiliated with the COE who took the survey each year demonstrates this population is utilizing the Education Library more since the renovation. In 2018, this growth occurred even though there were far fewer courses offered in the COE for non-education majors during the COE renovation.

The self-reported survey data showed that patrons reported visiting the Education Library most frequently during the 2018 semester which corresponded to the reopening of the library after the renovation. However, in the 2018 survey, 55% (n=392) of participants reported visiting the Education Library for the sole purpose of viewing the renovated space. In 2019, the number of patrons who reported that they frequently visited the library decreased. This could be attributed to patrons visiting in 2018 to view the newly renovated space but then not continuing their use of the library.

In 2019, the college numbers seem to be more evenly distributed which may be attributed to the new learning spaces, the course offerings in the COE, and the proximity to new student housing. More patrons may be attracted to the Education Library as a general learning space instead of a space specifically built for those studying Education.

The Education Library is geared towards COE subject areas; therefore, it is hypothesized that before the renovation patrons outside the COE did not want to use the space given the subject of the collections and the age of the space. The

increase in non-Education majors' use of the Education Library following the renovation seems to indicate that students are more interested in finding a newly renovated place to study and not necessarily one that is connected to their major. Since the focus of the Education Library's collections remains on Education related materials, it is also hypothesized that the changes in the library's learning spaces accounts for the increase in patrons from other colleges using the library.

### *Group Study Rooms Grow as a Popular Library Learning Space*

Based on group study room reservation data and survey responses, participants are increasingly reserving and utilizing group study rooms. Group study rooms act as semi-private learning spaces that continue to grow in demand. In the 2019 survey, more participants ranked them the most important feature of the Education Library than in the past two surveys. The open-ended responses indicated that while participants still desire group study rooms, want more of them, and want them to be soundproof, they were overall satisfied with the updates and new furniture provided. These results display the importance of group study rooms to today's college students.

### *Library Materials Usage Related to Changes in Library Spaces*

The circulation data shows an increase in the number of print material check outs, both general and Children's/YA books, even though the library underwent a massive weeding project prior to the renovation. Prior to the renovation, the total number of print materials available was weeded down from 120,000 to 70,000 volumes. The increase in online Course Reserves in the 2018-2019 AY is most likely attributed to the increase in COE courses being offered online while the COE was under construction. In the Spring 2020, the library closed to the public effective March 19th due to COVID-19. It is reasonable to expect that the checkout of materials would have increased from the previous Spring if the library had remained open.

The self-reported use of library materials from the surveys demonstrates that participants that took the survey seldom or never check out materials. The value of library materials for survey participants fell from 13% (n=74) in 2017 to 7% (n=50) in 2018 to 6% (n=38) in 2019. In the past, the Education Library has seen a small number of patrons check out a large number of books on a regular basis. So for those patrons, library materials are very important but overall, the library space is more highly valued and being used more as a learning space than as a place to check out materials.

### *Public Computer Usage Increases*

Based on the computer usage data and the survey responses, patrons are increasingly using the public computers in the Education Library. With the addition of the new computers and the computer lab, there are more options and approximately half of the survey participants reported being satisfied with the computer lab addition. An increase in satisfaction was seen from 2018 when the computer lab first opened with 51% of participants being satisfied to 63% reported in the 2019 survey.

Even though very few students brought up computers in the open-ended responses for all three surveys, as soon as more computers were added after the renovation, an increase in overall usage of all computers in the library was seen. The number of unique logins, unique users, and application launches have continued to rise each semester since the library reopened and were predicted to continue in Spring 2020 if the library had remained open. These results show that computer availability in academic libraries is very important to library patrons and creating a learning space dedicated to computers can attract patron usage.

### *What Would Make the Education Library Better?*

The most consistent answer to the open-ended question, "What would make the Education Library better?" from all three surveys was a request to increase the hours of operation. Participants of the survey increasingly reported wanting longer evening and weekend hours, and many requested 24/7-hour access to the library's learning spaces. However, the hours are unable to be changed. It is hypothesized that the increase in requests for more hours could be attributed in part to the renovation since the learning spaces in the library increased and are now more comfortable and varied in type.

The two responses that saw the most dramatic decrease were regarding the number of electrical outlets and the furniture. This decrease in number indicates that these issues were addressed with the library renovation. The improvement of these library features may also attribute to the request for more hours since the space is more comfortable and easier to use. The 2018 survey was conducted while the contractors were still finalizing construction issues. It is hypothesized that some students still reported issues with electrical outlets in the 2018 survey due to ongoing construction issues which left some outlets unusable. Based on the responses, these issues were addressed and in the following survey, the number of responses regarding outlets decreased again.

The increase in the number of participants that reported nothing would make the Education Library better demonstrates that some participants were happy with the

renovation. However, this number decreased in the 2019 survey. These results show that there continue to be areas of the library as a whole that can be improved.

Access to food options also remained a consistent answer to the open-ended question. This should be addressed with the completion of the COE construction and the addition of two food options. While these food options are not within the library itself, they are in close proximity and will be the closest food options on this side of campus. The responses regarding food options indicate that in order for students to fully utilize learning spaces they need access to food and drink options nearby.

### *Updated Learning Spaces Improves Patron Satisfaction*

Participant satisfaction increased when more furniture, improved lighting, additional group study rooms, and an increased number of outlets were added to the building post-renovation. The survey results also found, as with previously reported results, the hours of operation continue to be the highest area of dissatisfaction for patrons of the Education Library. Based on these results, it is hypothesized that students desire learning spaces that optimize their study environment so they can complete assignments and work towards academic success. They also show that students want to be able to access these learning spaces at their convenience and so continue to voice a dissatisfaction with the hours of operation.

### **Limitations**

Throughout the 2018-2019 and 2019-2020 AYs, renovations have continued in the COE complex resulting in fewer classes being offered near the library (more online), the displacement of some faculty, and continued noise disruptions all of which may have been factors in the survey results. In addition, Spring 2020 usage data was incomplete due to the Education Library closing effective March 19th due to COVID-19 precautions. Follow-up plans for a Fall 2020 survey were canceled as the library has implemented significant COVID-19 related restrictions that would not allow comparisons to previous surveys and usage data.

### **Conclusions**

The Education Library's four-year longitudinal study collected data on library usage and survey participant opinions and satisfaction. These results were utilized to make decisions on library spaces and how to improve them. For example, as a result of conducting the surveys, immediate action was taken on some of the comments made including making sure all electrical outlets were properly working, changing the building temperature, fixing one of

the restrooms, and purchasing additional circulating materials such as books and technology. Also, based in part on the open-ended responses, the Librarians were able to make changes to their collection development strategies including an increase in the purchase of modern children's and YA books.

The Education Library reopened for the Fall 2020 semester with numerous precautions due to COVID-19. These include restrictions on occupancy, food and drink allowed in the building, group study spaces, and the number of computers available. Since these precautions have been implemented students have expressed verbally and in writing their frustration with these restrictions, illustrating how important learning spaces are to students.

Overall, the study found that library patrons want learning spaces, such as the library, to be open for longer hours of operation especially in the evenings and on the weekends, offer comfortable furniture, good lighting, clean spaces, access to food, and technology such as public computers and additional electrical outlets. It is hypothesized that the improvements in the Education Library's learning spaces increased the number of patrons visiting the library, the usage of library materials, use of the public computers, and the overall satisfaction with the library. Future research may wish to examine the relationship between library spaces and student academic success and performance, how academic faculty utilize library spaces, differences between undergraduate and graduate student use of library spaces, and the influence of COVID-19 on the use of learning spaces.

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## LIBRARY RENOVATIONS AND STUDENT BEHAVIORS

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## Appendix A

## 2017 Survey Questions

**Please read this consent document carefully before you decide to participate in this study.**

The Education Library is interested in understanding the perceptions, needs, and experiences of faculty, staff, and students at the Education Library. Your responses will inform future decisions about the Education Library.

This survey presents multiple choice and open-ended questions about your perceptions, needs, and experiences with the Education Library. You will also have the opportunity to participate in a follow-up survey in the Fall semester of 2018.

This survey is likely to take no more than 5-10 minutes. There are no perceived risks of your participating in this survey; there are no intended direct benefits to your participation but long-term benefits will help to better inform future decisions about the Education Library.

Every 20th participant who submits a completed survey will receive a \$15 gift certificate, up to 20 recipients.

All information you provide will be maintained in a secured UF server; no personally identifiable information will be disclosed or shared. Your identity will be kept confidential to the extent provided by law. Your participation is completely voluntary. There is no penalty for not participating. You have the right to withdraw from the study at any time without consequence.

Who to contact if you have questions about the study: If you have any questions about this study or your participation in it, please contact Rachael Elrod, Head, Education Library at (352) 273-2627 or [relrod@ufl.edu](mailto:relrod@ufl.edu).

Who to contact about your rights as a research participant in the study: The Institutional Review Board (IRB) at the University of Florida has reviewed and approved this study: IRB201702247. If you have questions about the research study, please contact the IRB02 Office, PO Box 112250, University of Florida, Gainesville, FL 32611-2250, (352) 392-0433.

**I have read the procedure described above. By clicking on the link below, I voluntarily agree to participate in the survey.**

1. What best represents your status at [institution name redacted]?

- a. Undergraduate student
- b. Graduate student
- c. Alumni
- d. Staff
- e. Faculty
- f. Other (please specify)

2. Which of the following most closely represents your major area of study or teaching?

- a. Agricultural and Life Sciences
- b. Arts
- c. Business
- d. Dentistry
- e. Design, Construction and Planning
- f. Education
- g. Engineering
- h. Health and Human Performance
- i. Journalism and Communications
- j. Law
- k. Liberal Arts and Sciences
- l. Medicine
- m. Nursing
- n. Pharmacy
- o. Public Health and Health Professions
- p. Veterinary Medicine

3. Did you know that there is a library (Education Library) located in [building name redacted] (College of Education)?

- a. Yes
- b. No
- c. Other, please explain

4. How many times in the past year have you visited the Education Library?

- a. Never
- b. Once or twice a semester
- c. Once or twice a month
- d. Once or twice a week
- e. Daily

5. Thinking about your in-person visits to the Education Library, approximately how often did you do the following? Options: Never, Once or twice a semester, Once or twice a month, Once or twice a week, Daily

- a. Check out library materials
- b. Use a library computer

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- c. Get help from a Librarian
- d. Request a 3D print job
- e. Use the scanner
- f. Use the printer
- g. Socialize/hang out
- h. Use library facilities

6. Thinking about your in-person visits to the Education Library, how satisfied or dissatisfied are you with the following? Options: Extremely satisfied, Slightly satisfied, Neither satisfied nor dissatisfied, Slightly dissatisfied, Extremely dissatisfied

- a. Directional signs
- b. Safety
- c. Cleanliness
- d. Availability of electrical outlets
- e. Furniture
- f. Lighting
- g. Hours of operation
- h. Quiet work space
- i. Private work space
- j. Group work space
- k. Presentation practice space

7. What would make the Education Library better?

8. Please rank the following uses of the Education Library in order of importance to you.

- a. Check out material(s)
- b. Quiet study space
- c. Private study space
- d. Group study space
- e. Study rooms
- f. Library computers
- g. Other (please describe)

9. While you have been at [institution named redacted], how many times have you done each of the following? Options, 0, 1, 2, 3, 4, 5 or more.

- a. Authored or co-authored a peer-reviewed publication (book, journal, article, book chapter, etc.)
- b. Received an academic prize or award
- c. Presented a paper, poster, or other academic project at a professional conference

10. Which of the following best describes your primary place of residence?

- a. Off-campus in [town name redacted]

- b. Off-campus outside of [town name redacted]
- c. On-campus Sorority housing
- d. On-campus, non in Sorority housing
- e. Other (please describe)

11. How likely are you to visit the Education Library now that you know it is here?

- a. Extremely likely
- b. Slightly likely
- c. Neither likely nor unlikely
- d. Slight unlikely
- e. Extremely unlikely

12. What would make you more likely to visit the Education Library in the future?

13. Please indicated your [campus ID] number. This will be kept confidential.

14. Please provide your email address to participate in a more detailed library use study. Your email address will not be shared and all information provided to us will remain confidential to the fullest extent of the law. There is no compensation for participating in this study; however, twenty \$15 Amazon gift cards will be issued to every 20th participant, up to twenty cards in total.

## Appendix B

## 2018 Survey Questions

**Please read this consent document carefully before you decide to participate in this study.**

The Education Library is interested in understanding the perceptions, needs, and experiences of faculty, staff, and students at the Education Library. Your responses will inform future decisions about the Education Library.

This survey presents multiple choice and open-ended questions about your perceptions, needs, and experiences with the Education Library. You will also have the opportunity to participate in a follow-up survey in the Fall semester of 2018.

This survey is likely to take no more than 5-10 minutes. There are no perceived risks of your participating in this survey; there are no intended direct benefits to your participation but long-term benefits will help to better inform future decisions about the Education Library.

Every 20th participant who submits a completed survey will receive a \$15 gift certificate, up to 20 recipients.

All information you provide will be maintained in a secured UF server; no personally identifiable information will be disclosed or shared. Your identity will be kept confidential to the extent provided by law. Your participation is completely voluntary. There is no penalty for not participating. You have the right to withdraw from the study at any time without consequence.

Who to contact if you have questions about the study: If you have any questions about this study or your participation in it, please contact Rachael Elrod, Head, Education Library at (352) 273-2627 or [relrod@ufl.edu](mailto:relrod@ufl.edu).

Who to contact about your rights as a research participant in the study: The Institutional Review Board (IRB) at the University of Florida has reviewed and approved this study: IRB201702247. If you have questions about the research study, please contact the IRB02 Office, PO Box 112250, University of Florida, Gainesville, FL 32611-2250, (352) 392-0433.

**I have read the procedure described above. By clicking on the link below, I voluntarily agree to participate in the survey.**

1. What best represents your status at [institution name redacted]?
  - a. Undergraduate student
  - b. Graduate student
  - c. Alumni
  - d. Staff
  - e. Faculty
  - f. Other (please specify)
  
2. Which of the following most closely represents your major area of study or teaching?
  - a. Agricultural and Life Sciences
  - b. Arts
  - c. Business
  - d. Dentistry
  - e. Design, Construction and Planning
  - f. Education
  - g. Engineering
  - h. Health and Human Performance
  - i. Journalism and Communications
  - j. Law
  - k. Liberal Arts and Sciences
  - l. Medicine
  - m. Nursing
  - n. Pharmacy
  - o. Public Health and Health Professions
  - p. Veterinary Medicine
  
3. Did you know that there is a library (Education Library) located in [building name redacted] (College of Education)?
  - a. Yes
  - b. No
  - c. Other, please explain
  
4. How many times have you visited the renovated Education Library?
  - a. I have not visited the Education Library
  - b. 1-3 times
  - c. 4-8 times
  - d. 9 or more
  
5. Did you use the Education Library prior to the renovation?
  - a. Yes
  - b. No
  - c. I don't remember
  
6. Thinking about your in-person visits to the renovated Education Library, approximately how often did you do the following? Options: Never, 1-3 times since

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- opening, 4-8 times since opening, 9 or more times since opening.
- Checked out library materials
  - Used a library computer
  - Used a group study room
  - Requested help from a Librarian
  - Requested a 3D print job
  - Used the scanner
  - Used the printer
  - Socialized/hung out
  - Used the library facilities (restroom/water fountain)
  - Come in just to view the renovation space
7. Thinking about your in-person visits to the renovated Education Library, approximately how often have you used the following new features? Options: Never, 1-3 times since opening, 4-8 times since opening, 9 or more times since opening.
- The new accessible restrooms (ADA/Gender neutral)
  - Lactation room
  - Computer lab
8. Thinking about your in-person visits to the renovated Education Library, how satisfied or dissatisfied are you with the following? Options: Satisfied, Neither satisfied or dissatisfied, Dissatisfied, Not applicable.
- Directional signs
  - Safety
  - Cleanliness
  - Availability of electrical outlets
  - Furniture
  - Lighting
  - Hours of operation
  - Quiet work space
  - Individual work space
  - Group work space
  - Group study rooms
  - Presentation practice space
9. Thinking about your in-person visits to the renovated Education Library, how satisfied or dissatisfied are you with the new features? Options: Satisfied, Neither satisfied or dissatisfied, Dissatisfied, Not applicable
- Accessible restrooms
  - Lactation room
  - Computer lab
10. What would make the Education Library better?
11. Please rank the following uses of the Education Library in order of importance to you.
- Check out material(s)
  - Quiet study space
  - Individual study space
  - Group study space
  - Group study rooms
  - Library computers
  - Lactation room
  - Accessible restrooms
  - Access to a librarian
  - Other (please describe)
12. While you have been at [institution name redacted], how many times have you done each of the following? Options: 0, 1, 2, 3, 4, 5 or more.
- Authored or co-authored a peer-reviewed publication (book, journal, article, book chapter, etc.)
  - Received an academic prize or award
  - Presented a paper, poster, or other academic project at a professional conference
13. Which of the following best describes your primary place of residence?
- Off-campus in [town name redacted]
  - Off-campus outside of [town name redacted]
  - On-campus Sorority housing
  - On-campus, non in Sorority housing
  - Other (please describe)
14. How likely are you to visit the Education Library now that you know it is here?
- Extremely likely
  - Slightly likely
  - Neither likely nor unlikely
  - Slightly unlikely
  - Extremely unlikely
15. Please indicated your [campus ID] number. This will be kept confidential.
16. Please provide your email address to participate in a more detailed library use study. Your email address will not be shared and all information provided to us will remain confidential to the fullest extent of the law. There is no compensation for participating in this study; however, twenty \$15 Amazon gift cards will be issued to every 20th participant, up to twenty cards in total.



## Appendix C

## 2019 Survey Questions

Please read this consent document carefully before you decide to participate in this study.

The Education Library is interested in understanding the perceptions, needs, and experiences of faculty, staff, and students at the Education Library. Your responses will inform future decisions about the Education Library.

This survey presents multiple choice and open-ended questions about your perceptions, needs, and experiences with the Education Library. You will also have the opportunity to participate in a follow-up survey in the Fall semester of 2018.

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1. What best represents your status at [institution name redacted]?
  - a. Undergraduate student
  - b. Graduate student
  - c. Alumni
  - d. Staff
  - e. Faculty
  - f. Other (please specify)
  
2. Which of the following most closely represents your major area of study or teaching?
  - a. Agricultural and Life Sciences
  - b. Arts
  - c. Business
  - d. Dentistry
  - e. Design, Construction and Planning
  - f. Education
  - g. Engineering
  - h. Health and Human Performance
  - i. Journalism and Communications
  - j. Law
  - k. Liberal Arts and Sciences
  - l. Medicine
  - m. Nursing
  - n. Pharmacy
  - o. Public Health and Health Professions
  - p. Veterinary Medicine
  
3. How many times in the past year have you visited the Education Library?
  - a. Never
  - b. Once or twice a semester
  - c. Once or twice a month
  - d. Once or twice a week
  - e. Daily
  
4. Thinking about your in-person visits to the Education Library, approximately how often did you do the following? Options: Never, Once or twice a semester, Once or twice a month, Once or twice a week, Daily
  - a. Check out library materials
  - b. Used a library computer
  - c. Used a group study room
  - d. Requested help from a Librarian
  - e. Requested a 3D print job
  - f. Use the scanner
  - g. Use the printer
  - h. Socialized/hung out
  - i. Used the library facilities (restroom/water fountain)
  - j. Used the accessible restrooms

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- k. Used the lactation room
  - l. Used the computer lab
5. Thinking about your in-person visits to the Education Library, how satisfied or dissatisfied are you with the following? Options: Extremely satisfied, Slightly satisfied, Neither satisfied nor dissatisfied, Slightly dissatisfied, Extremely dissatisfied.
- a. Directional signs
  - b. Safety
  - c. Cleanliness
  - d. Availability of electrical outlets
  - e. Furniture
  - f. Lighting
  - g. Hours of operation
  - h. Quiet work space
  - i. Individual work space
  - j. Group work space
  - k. Group study rooms
  - l. Presentation practice space
  - m. Accessible restrooms
  - n. Lactation room
  - o. Computer lab
6. What would make the Education Library better?
7. Please rank the following uses of the Education Library in order of importance to you.
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  - b. Quiet study space
  - c. Individual study space
  - d. Group study space
  - e. Group study rooms
  - f. Library computers
  - g. Lactation room
  - h. Accessible restrooms
  - i. Access to a librarian
  - j. Other (please describe)
8. While you have been at [institution name redacted], how many times have you done each of the following? Options: 0, 1, 2, 3, 4, 5 or more.
- a. Authored or co-authored a peer-reviewed publication (book, journal, article, book chapter, etc.)
  - b. Received an academic prize or award
  - c. Presented a paper, poster, or other academic project at a professional conference
9. Which of the following best describes your primary place of residence?
- a. Off-campus in [town name redacted]
- b. Off-campus outside of [town name redacted]
  - c. On-campus Sorority housing
  - d. On-campus, non in Sorority housing
  - e. Other (please describe)
10. What would make you more likely to visit the Education Library in the future?
11. Please indicated your [campus ID] number. This will be kept confidential.
- Please provide your email address to participate in a more detailed library use study. Your email address will not be shared and all information provided to us will remain confidential to the fullest extent of the law. There is no compensation for participating in this study; however, twenty \$15 Amazon gift cards will be issued to every 20th participant, up to twenty cards in total.

Appendix D

Figure 7. First floor plan of the Education Library, group study rooms are in orange

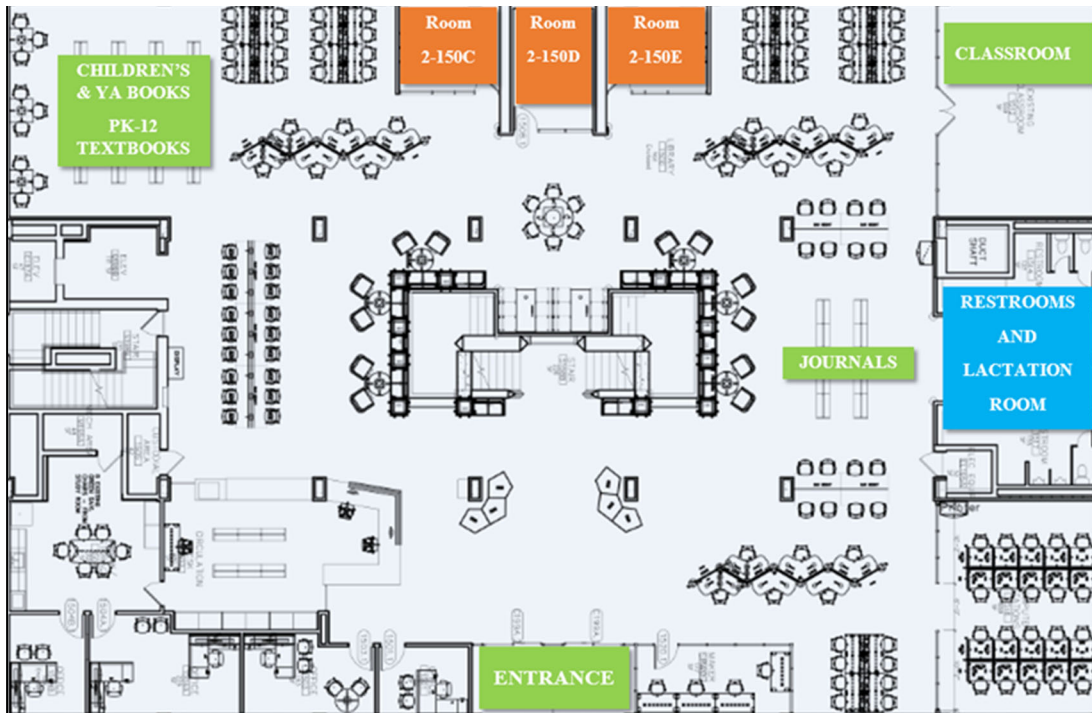


Figure 8. Second floor plan of the Education Library, group study rooms are in orange

