Space: Describing and Assessing Library and Other Learning Spaces

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Abstract

Colleges and universities are investing in revamping their spaces to meet student and faculty needs. As collaborative, shared, and digital library collection development matures, the print record that occupies library shelves representing the intellectual works of our students and faculty is utilized less frequently compared to the digital record—a comparative analogy may be between sailing ships versus steam boats, railroads and ships versus airplanes, and the telegraph versus our cell phones. The miles and miles of open physical shelving housing print books and journals that have occupied prime real estate on campuses to facilitate access to the print record are rethought, reimagined, and redesigned. Shared and/or remote physical storage houses our less frequently used print record. The prime real estate of library space is conceptualized as an environment where our students and faculty physically occupy in greater numbers with greater frequency and intensity in order to achieve increased inspiration, enhanced productivity, and improved learning and research outcomes. The need to capture the transformation and evolution of library spaces is an important driver in this day and age. Classroom and other spaces are also transforming in the academy to be a more effective conduit for student learning, graduate studies, and faculty research. In this paper we discuss a variety of approaches that organizations are undertaking ranging from the ARL Facilities Inventory to the FLEXSpace effort at SUNY to the Learning Space Rating System at ELI/Educause. The authors present results from the ARL Facilities Inventory and lessons learned to date.

Short Description

Find out what data are useful to university and library leaders and directors for benchmarking, longitudinal analysis of spaces, and what kinds of innovative renovations and construction projects are being reported. How can we capture the value of library spaces and their contributions to student and faculty outcomes, and how can library space assessment be woven into campus wide projects?

Outcomes

Recognize the linkages between library space assessment and university level student and faculty outcomes through campus wide assessment efforts in order to establish the library as a strong collaborative partner.

Introduction

Colleges and universities are investing in their existing spaces to meet student and faculty needs. As collaborative, shared, and digital library collection development matures, the print record that occupies library shelves is utilized less frequently compared to the digital. The miles of open physical shelving housing print books and journals that have occupied prime real estate on campuses are rethought, reimagined, and redesigned.[1] As digital collections

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grow in volume and usage, shared and other high density physical storage is increasingly available to house our less frequently used print record. Spaces occupied by library collections can be reimagined as an environment where our users are inspired, productive, and enjoy improved learning and research outcomes. Classroom and other spaces are also transforming to be more effective conduits for student learning and faculty research. Faculty and students are increasingly differentiating the ways they perceive library spaces.[2]

The need to capture the transformation and evolution of library and other learning spaces is important. In doing so, we face these questions:

- How can institutions learn from each other? What types of comparisons and benchmarking can we derive?
- How can we use and analyze visual evidence effectively? What are some useful analytical approaches?
- How can facilities data help us tell our story and inform future renovation/construction?

In this paper, we provide results and an analysis of quantitative data shared by member institutions of the Association of Research Libraries (ARL) in the ARL Facilities Inventory. Additionally, we share information on the types of images submitted in conjunction with the Facilities Inventory. We will also discuss learning spaces planning resources such as FLEXSpace and the Learning Space Rating System developed by CNI and its partners and member institutions.

ARL Facilities Inventory

Based on strong interest from member institutions in capturing how library spaces were being developed and repurposed, ARL created a facilities inventory that was administered late 2014 and early 2015 with responses continuing throughout 2015.

The ARL Assessment Committee developed and tested a survey that covered three pages—at first there was push back on having too many data elements, so the survey was reduced to six key questions, a request for three images, and additional contextual data (such as URLs, designs, and flowcharts). Questions included: number of seats, net assignable square footage for study areas, classrooms, and collections; gate counts, the trend for the number of physical locations (up, down, same), funds spent on facilities, and a projection on future facilities funding (up, down, same). Respondents were requested to submit images that reflected how spaces were being used with no pictures of building exteriors or symbolic gothic structures. Compilation and analysis of the quantitative data took place in 2015 and 2016. Additionally, a review and analysis of the images that were submitted took place in 2016.

Findings from Facilities Inventory

A total of 95 ARL members responded to the facilities inventory. The mean number of seats reported was 3,674, with the highest figure reported by the University of Toronto at just over 13,000 seats.

The average and median gate counts figures, for the 88 libraries reporting data, are respectively 2,021,269 and 1,856,005—a better picture is provided by the gate count quartiles:

Quartiles of gate count data (n = 88 research libraries)

Percentiles	25	1328183.25
	50	1856005.50
	75	2532238.50

The third question in the inventory requested respondents to provide the net assignable square footage of their spaces and break that total figure down into the following categories: collections, seating, classrooms, and other. The mean assignable space was 407,415 square feet. In spite of many recent efforts to shift library spaces from collections to users, the highest reported usage of space is still for collections. Libraries reported a mean of 183,558 square feet, or just over 45% of total space, dedicated to collections. Seating represented just under 30% of total space and classrooms occupied a relatively small 4% of space.

The fourth question requested information on the total number of physical library locations. Despite anecdotal evidence of branch library closures, nearly 68% of respondents indicated that the number of library locations was holding steady while almost 18% indicated a growing number of physical locations.

The next question asked for the total facilities expenditures by the libraries over the previous three years. The mean here was just under $8,000,000 with several large projects leading the way. The University of Chicago reported the highest expenditure of $94,550,000, while North Carolina State University was second at just over $85,000,000. Both of these universities opened new libraries during this time. Other universities high on the list—such as Duke University—were in the process of performing substantial renovations to existing spaces.

The final question asked respondents how they expected their facilities expenditures to trend going forward. Over half (56%) expected that their expenditures for facilities would stay the same and nearly a quarter expected their expenditures to increase. This seems to portend a continuing emphasis on repurposing or building new library facilities.

Good footnotes were provided by many libraries. These provided additional contextual data such URLs, designs, and flowcharts.

Libraries were asked to upload up to three images representing spaces in their facilities. These images were placed in an ARL data repository as shown by the example in Figure 1. Instead of providing images, some libraries supplied web addresses that linked to their own image banks (Figure 2). At first, we were unsure how to analyze and describe the images. However, our group spent time this year reviewing those images and tagging them to get an idea of what spaces were being featured and how they were being used.

Figure 1. The ARL web interface featuring images from research library spaces
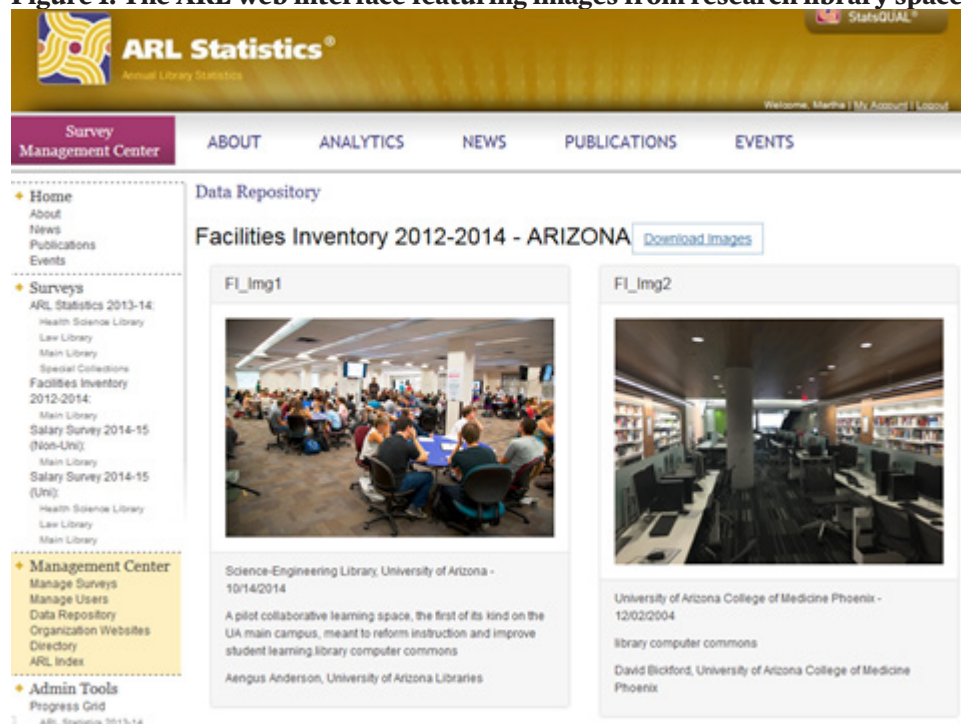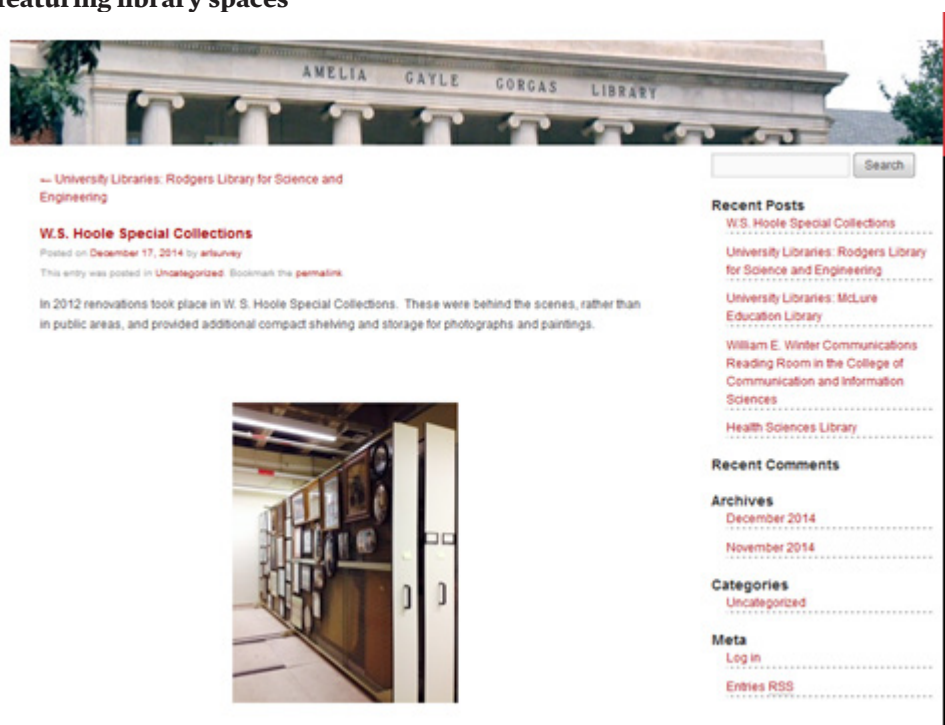
Figure 2. An example of links provided by some research libraries to web pages hosted locally featuring library spaces

We analyzed 134 images and assigned terms to them from an initial list developed by one of the team members and refined by others. We used a total of 46 standard terms to describe these spaces and assigned 246 terms in total—some images were assigned more terms than others if the content needed more explanation. So the quality of the image guided the number of themes we identified in each image, with some being richer in concepts than others. The most popular space featured in these images is the 'group study' environment, where a total of 32 images were identified as such out of the 134. Other popular terms are listed in the table below:

Computer lab	6
Active Learning Classroom	7
Collections	7
Exterior	7
Media Collections	8
Media Viewing	8
Small Meeting/Practice/Group Study Room	8
Classroom – Flexible Tables	9
Open Area – Traditional Tables Seating	10
Large Display Screens	12
Learning Commons	14
Silent/Individual Study/Visually Impaired	16
Open Area – Mixed Seating	21
Group Study	*32*

Other terms used only once include:

Corridors and Spaces Created within Corridors
Simulation Space
Visualization Space
Brainstorming
Classroom – Fixed Tables
Classroom
Connective Space
Exhibit Space
Lecture Hall/Auditorium
Presentation Practice
Prototyping Lab
Prototyping Space
Research Commons
Scanners

If this effort is to be repeated again, we would recommend that the images be collected having a specific purpose in mind, such as renovations or construction or technology equipment, for example. We would also recommend that since there is a baseline collection in ARL's hands now, the focus may need to be on recently renovated spaces in the future. And finally, serious consideration should be given to integrating the ARL data collection in some of the other efforts taking place in higher education and described in the last section of this paper.

Learning Spaces Planning Resources

This section discusses a number of resources you might want to consult as you look to plan learning spaces. To locate additional resources of specific information about a variety of spaces at universities, try FLEXspace, created through a collaboration of some university systems—SUNY and CalState along with partners such as the EDUCAUSE Learning Initiative (ELI) and Herman Miller. Institutions contribute photos and extensive information about spaces they have built or renovated. Many are classroom spaces but some library spaces have been contributed, and they strongly encourage libraries to contribute more examples. You need an account to access the information, but it is free to establish an account. FLEXspace was developed using the Shared Shelf software provided by ARTstor.

The NCSU libraries along with brightspot strategy created the Learning Space Toolkit. Two sections are of particular interest. There is a section focusing on assessment, particularly strong on needs assessment, and there is also a Space Browser in the Space Types section that includes photos and useful descriptions of a variety of renovated or new library spaces.

The Learning Space Rating System developed under the auspices of the ELI provides a set of measurable criteria to assess how well the design of classrooms support and enable active learning activities. There are extensive criteria, many of which could be applied to at least some types of library spaces beyond classrooms. This resource can be freely downloaded and used to both highlight the deficiencies of existing spaces and to evaluate whether newly renovated spaces meet the criteria developed in this system. It can also be used as a planning device in terms of matching the criteria included with your own specifications for spaces.

"A Guide to Planning for Assessing 21st Century Spaces for 21st Century Learners" was produced by the Learning Spaces Collaboratory. This guide focuses primarily on applying learning and pedagogical principles to the design and assessment of learning spaces and also includes profiles and photos from a number of institutional projects.

Conclusion

The qualitative and quantitative data collected through the ARL Facilities Inventory can be of help as you look to benchmark your facilities against peer

institutions. While we are just starting to analyze the rich resource of the image database in the facilities inventory, it can still be useful in helping to showcase exemplary facilities and inspire others to develop similar spaces.

In addition to the ARL Facilities Inventory, there are a number of resources that are available for you to consult as you plan new learning spaces. These resources can help define your space needs, provide examples of similar spaces, and showcase best practices for creating active learning spaces.

Information from the facilities inventory and the planning resources can be used to help make the case for facilities funding. It is important to recognize and utilize the linkages between library space assessment and university level student and faculty outcomes. Ideally, your work in the library can help to establish the library as a strong collaborative partner in campus wide assessment efforts.

References

1. Robert Fox and Bruce Keisling, "Sacred or Secular? How Student Perceptions May Guide Library Space Design and Utilization" (presentation, Southeastern Library Assessment Conference, Atlanta, GA, October 21–23, 2013).

2. Amy Yeager and Martha Kyrillidou, "Design Thinking and LibQUAL+: The Landscape of Changing User Needs and Expectations of Faculty and Undergraduate Students in ARL Libraries—Trends 2003–2011" (poster, Canadian Library Assessment Workshop, Toronto, ON, October 16–18, 2013, and Southeastern Library Assessment Conference, Atlanta, GA, October 21–23, 2013).