The Librarian Activity Project: A Time Allocation Study of Academic Public Services Librarians

Brian Winterman and Andrew Asher

abstract: Typical internal assessment practices of academic libraries such as instructional or reference statistics can be valuable measures but provide a limited view of overall academic librarian impact. To examine librarian work more comprehensively and with emphasis on institutional outcomes, Indiana University Bloomington Libraries conducted a time-allocation study of the activities of public services librarians. This article describes the goals, methods, and results of the Librarian Activity Project, which aimed to determine what librarian work activities can be accurately assessed to empirically demonstrate library value and impact.

Introduction

The Librarian Activity Project (LAP) at the Indiana University Bloomington (IUB) Libraries originated as an effort to utilize time allocation research techniques to better understand librarians' day-to-day activities and to identify more meaningful ways to demonstrate and communicate the impact of activities poorly represented by commonly reported library metrics (such as numbers of reference questions or instruction sessions). The project goals included the following:

1. Quantify librarian contribution to the education and research missions of Indiana University (IU).
2. Quantify librarian contribution in these areas in a way that allows comparison with other teaching and research faculty efforts.
3. Discover new ways for librarians to demonstrate their impact on education and research at IU.

portal: Libraries and the Academy, Vol. 21, No. 3 (2021), pp. 531–551.

Indiana University Bloomington (IUB) is the flagship campus of the IU system with hundreds of undergraduate and graduate programs and an enrollment of over 40,000 students. IU's mission is to "create, disseminate, preserve, and apply knowledge." The IUB Libraries has a collection of over 10 million cataloged items, operates numerous branch libraries, and employs around 70 full-time librarians. The mission of the libraries is to "support and strengthen teaching, learning, and research by providing the collections, services, and environments that lead to intellectual discovery." Librarians at IUB are faculty members eligible for tenure, and their duties are divided into three broad categories: performance, professional development (including research activities), and service.

In early 2018, all IUB librarians with public services responsibilities (44 librarians) were invited to an information and training session that described the goals and protocol of the LAP study (see Appendix A) as well as its data use procedures and confidentiality expectations.[1] Particular care was taken to explain that the study results were not intended to evaluate librarians' work or work decisions, but rather to understand how they spent time on various activities, and that no identifying information would be included in any reports. Twenty-two of 44 eligible librarians agreed to participate in the study by logging their activities for two consecutive days and participating in a follow-up interview to further contextualize the data gathered about library impacts.

Literature Review

A growing body of LIS literature discusses the roles and responsibilities of academic librarians in relation to time. Karen Nicholson points out the importance of attending to the political and power dimensions embedded within time allocation decisions in libraries and higher education,[2] and in a second study analyzes the "rhythms and pace" of librarian work in the context of management models.[3] While this study does not capture librarians' efforts in increments of hours or days, it offers a unique critical view of patterns and rhythms in their workload over the course of a semester or academic year, revealing, for example, more instructional activity in the fall versus the spring. The team of Deborah Hicks and Theresa Schindel and that of Jenny Bossaller Christopher Sean Burns, and Amy VanScoy analyze qualitative interviews with librarians to understand the importance of perceptions of time to librarians' professional identities and work practices.[4] Using survey methods, Lora Lennertz and Phillip Jones explore subjective attitudes toward time among library professionals, with particular emphasis on differences in the experience of deadlines and seasonality between library departments.[5] Sonja McAbee and John-Bauer Graham examine the time librarians spent on high-level task categories, including reference services, instruction, and collection development.[6] Rayla Tokarz explores time use for a librarian in the first 60 days of a new position, though her study was limited to only her personal recordings and reflections.[7]

Few time allocation studies of librarians appear in the LIS literature. Dana Miller and Teressa Keenan examine the work time of technical services librarians at two different institutions using daily work logs and follow-up questions.[8] This study focuses principally on time management and efficiency within specific departments rather than broader institutional impact, though their recommendations for carrying out such

a study are useful. An investigation by Dilys Morris, Joanne Bessler, Flo Wilson, and Jennifer Younger describes the tracking of library staff work activities for cost analysis and resource allocation,[9] which could be an interesting and valuable way to look at institutional impact.

In terms of purpose and study subjects, a study similar to LAP was reported by Anthony Ferguson and John Taylor in which 17 librarians were asked to track their activities for five days to examine whether librarian activities met the stated goals and objectives of the institution.[10] While the results were not conclusive, the authors point out that the findings could still "precipitate and facilitate the type of introspection in which professional librarians should be involved." One paper particularly helpful to the authors' work was Jeanne Brown's study of librarian daily logs and the categorization of responsibilities.[11] Finally, because the authors were interested in situating librarian efforts in terms similar to nonlibrarian faculty work, they consulted a faculty time allocation study outside the library literature for guidance on developing categories of activities.[12]

Methods and Data Collected

Developing a data collection method that ensures the representativeness of observations is critical to the validity of a time allocation study. Time allocation research methods developed by sociologists, anthropologists, and primatologists outline a number of study designs that address the representativeness issue.[13] Researchers must make several key data collection decisions prior to beginning a study: first, they must determine the observation interval, or the duration over which observation data will be recorded.[14] Second, time allocation studies must carefully define the sampling units to be analyzed, that is, which activities of individuals, groups, or locations will be observed and recorded.[15] Finally, time allocation designs must decide if an activity will be treated as an event or a state. An event is an instantaneous action, more or less, while a state has a duration.[16] Depending on the questions researchers want to answer, an activity such as "reading" might be recorded as either an event or a state; if researchers are principally concerned with frequencies (and proportions), then treating activities as events is appropriate, but if they are also concerned with time spent on an activity, then activities should be treated as states.[17]

Additionally, a time allocation study's sampling method must be designed in a way to ensure that observations accurately represent the activities taking place over time. Researchers should consider both the frequency and the distribution of their observations within their sample duration, or the "period over which observations are made."[18] Investigators should also evaluate whether structural factors might bias a set of observations or otherwise affect their generalizability. Observational studies are particularly vulnerable to potential structural biases stemming from underlying schedule effects. These types of effects are often difficult or impossible to identify in advance, making it prudent to utilize formal methods to ensure a representative sample.

In this study, the authors utilized fixed interval sampling and recorded activities as events with individual public services librarians as the sampling unit of analysis. For each participating librarian, two consecutive work days were randomly selected to ensure a representative distribution throughout the spring 2018 semester (January to May)

semester. Due to resource and scheduling constraints, the authors chose to bound this study within a single semester. Therefore, seasonal differences (for example, activities that might only occur in fall semester) might not be reflected in this data.

Librarians were requested to log their principal activities every hour for two entire workdays on a reporting grid developed for this study. These daily activity logs (see Appendix B) asked librarians to code their activities into categories in three areas—university mission categories (for example, education and research), specific work categories (collections, instruction, and the like), and audience (for example, undergraduates or faculty)—and to include additional details in a notes section. Each hour was divided into four 15-minute recording units; librarians were not asked to track which 15 minutes within an hour they devoted to an activity, only to assign a duration of one to four 15-minute periods within the hour. Participants could report activities either by time spent or, in cases of multitasking, by which activity during that hour represented the most effort. Each one-hour fixed interval therefore produced four event units representing codable activities. This approach struck a balance between recording sufficient detail for analysis and placing too heavy a reporting burden on participants.

When assigning categories, the authors tried to make sure librarian activities could be examined alongside other teaching and research faculty with regard to the mission and core values of the university. To align librarian activities with a broad institutional mission category such as "education" or "research," special instructions were given for some activities to ensure they were categorized correctly. Reference activities are a good example to illustrate this:

- If a reference question was clearly tied to an undergraduate course, it was logged as education/other performance/undergraduate.
- If a reference question was tied to an undergraduate course for which a librarian had provided instruction, it was logged as education/instruction/undergraduate.
- If a reference question was clearly tied to non-curriculum-related research by faculty, it was logged as research/other performance/faculty.
- If no connection to curriculum or research could be identified, and no specific audience could be identified, the reference activity was logged as education and research/other performance/all.

After logging their activities, the librarians participated in a debriefing interview. These follow-up interviews served two purposes. First, the authors reviewed the daily activity logs with the participant to discuss each entry and correct any mistakes to make reporting of certain activities uniform across participants and to identify activities that warranted discussion in a recorded interview.

In total, the 22 librarians recorded 1,666 units of activity (416.5 hours) and took part in 17 debriefing interviews for analysis (five activity logs did not require a detailed follow-up interview). Participants included librarians working in humanities, area studies, social sciences, STEM, and special collections, and most were untenured at the assistant rank.

The utilization of random sampling in this study's design enables the authors to apply statistical techniques for evaluating the representativeness and generalizability of activities recorded. H. Russell Bernard and Peter Killworth outline a mathematical method for determining the number of observations needed to achieve various levels

of statistical reliability that can be applied to observational studies requiring time-based samples.[19] The number of observations needed to achieve a relatively high level of confidence in the representativeness of the distribution of time allocated to activities recoded by a study are often surprisingly few.

With 1,666 observations, this study has a 99 percent probability of observing at least once any activity that takes place 0.2 percent of the time, giving a high level of confidence in the generalizability of the observations. This design also allows the authors to calculate confidence intervals for each category of activity at various levels of precision. In the analysis that follows, they report confidence intervals at a 5 percent margin of error, meaning that 95 percent of the time, they would expect a theoretical "true" value of an activity's occurrence in the day-to-day activities of librarians will fall between the low and the high calculated values.

While the day-based sampling design of this study produces representative and generalizable data for the entire group of librarians participating, it is not necessarily representative at the level of the individual librarian. This limitation was intentional in the design of the study; the authors wanted to speak about time allocation for public services librarians as a group but not to produce data that might be used—even inadvertently—to evaluate individual librarians' performance. The following results report findings from both data sources, blending qualitative responses from the debriefing interviews and quantitative information from the activity logs to produce a meaningful and actionable narrative of librarian activities.

Results

General Participation and Time Allocation

Tables 1 to 3 illustrate participation levels, time recorded, average length of workdays, average break time recorded, and what times participants worked.

Fulfilling the Mission

One of the primary goals of LAP was to frame the activities of librarians within the mission (https://www.indiana.edu/about/mission.html) and core values (https://strategicplan.iu.edu/mission-values-vision/core-values.html) of the university and campus. Initially, the broad categories for activities recorded included education, research, and other, which might include breaks but also such things as meetings or service activities that could not be directly tied to education or research. Participants were asked to record education and research activities based on the following guidelines:

Education: Activities that support or fulfill the education mission of the university may include instruction (for credit or not); instructional preparation; assessment of teaching or learning; consultations related to curricula, courses, or assignments; and educational materials or displays.

Research: Activities that support or fulfill the research mission of the university may include any original research or support of original research not associated with coursework.

Table 1.
Summary of the Librarian Activity Project

Number of participants	22*
Days recorded	44
Units of activity recorded	1,666
Total hours recorded	416.5
Interviews recorded	17

*At the time of the study, the participants ranked as 2 full, 8 associate, and 12 assistant librarians.

Table 2.
Summary of a librarian's average workday

	Units recorded	Hours
Average work in a day	34.72	8.68
Average "breaks" recorded*	3.12	0.78
Average total workday	37.84	9.46

*"Breaks" were nonwork activities that included coffee breaks, lunch breaks, personal time, or other interruptions, such as "took a walk."

Table 3.
Hours of work recorded in the Librarian Activity Project (LAP)

	Units recorded	Hours	Percentage of activity
Activity recorded 8 a.m.–5 p.m.	1,526	381.5	91.6%
Activity before 8 a.m.	54	13.5	3.2%
Activity after 5 p.m.*	86	21.5	5.2%

*Participants recorded work activities ranging from 5 a.m. until 10 p.m. The activity after 5 p.m. (21.5 hours) was recorded by 13 of 22 participants, which means those individuals averaged about 1.65 hours of activity after 5 p.m.

During the follow-up interviews, a third major activity area was identified that was deemed too important to record under "other" since it accounted for a significant amount of librarian activity. The authors designated it "cultural development," which was adopted from the vision of the university (https://strategicplan.iu.edu/mission-values-vision/vision.html). They then manually corrected the daily activity logs of participants to represent it accurately in the analysis. Cultural development activities could not be directly tied to either education or research specifically, but transcend such activities as meetings or service in significance regarding the mission and core values of the university. This category will be discussed in more detail later. Table 4 illustrates the amount of activity reported in each of the four areas.

Table 4.

Allocation of librarian hours in the Librarian Activity Project (LAP) by mission, vision, and core value areas

Activity	Units recorded	Hours	Percentage of activity	Confidence interval* (95%)	High	Low
Education	637	159.25	38.2%	2.33%	40.53%	35.87%
Research	348	87	20.9%	1.95%	22.85%	18.95%
Cultural development	84	21	5.0%	1.05%	6.05%	3.95%
Other	598	149.5	35.9%	2.30%	38.20%	33.60%

*A confidence interval is a range of values that describes the uncertainty surrounding an estimate.

Education: A Closer Look

Education accounted for more librarian activity than any other area. Six of the 22 librarians spent more than 50 percent of their time on education activities. Instruction (including any preparation or follow-up activity) made up the majority of education activities. Performance might include various activities, though most of the hours recorded involved reference interactions that were related to curriculum in some way. Likewise, collections and service were recorded under education when those activities were primarily associated with education. Table 5 shows what categories were included in this activity area.

Education accounted for more librarian activity than any other area. Six of the 22 librarians spent more than 50 percent of their time on education activities.

The two most common audiences for instruction were graduates and undergraduates (see Table 6), representing almost 18 percent of all participant activity. "Other" in this case represents instruction for faculty or mixed audiences, while "external"

Table 5.

Education activities performed by librarians, by categories in the Librarian Activity Project (LAP)

Activity	Category	Units recorded	Hours	Percentage of education	Confidence interval*	High	Low
	Instruction	347	86.75	54.73%	3.87%	58.60%	50.86%
	Performance	145	36.25	22.87%	3.27%	26.14%	19.60%
Education	Collections	132	33	20.82%	3.16%	23.98%	17.66%
	Service	10	2.5	1.58%	0.97%	2.55%	0.61%
	Total	**634**	**158.5**	**100.00%**			

*A confidence interval is a range of values that describes the uncertainty surrounding an estimate.

Table 6.

Audiences for instruction performed by librarians in the Librarian Activity Project (LAP)

Category	Audience	Units recorded	Hours	Percentage of all activity	Confidence interval*	High	Low
	Undergraduate	167.0	41.75	10.02%	1.44%	11.46%	8.58%
	Graduate	126.0	31.5	7.56%	1.27%	8.83%	6.29%
Instruction	External	39.0	9.75	2.34%	0.73%	3.07%	1.61%
	Other	15.0	3.75	0.90%	0.45%	1.35%	0.45%
	Total	347.0	86.75	20.83%	1.95%	22.78%	18.88%

*A confidence interval is a range of values that describes the uncertainty surrounding an estimate.

represents a community continuing education course participants led. For this study, courses for which the librarian was the instructor of record were treated like any other course, so a significant portion of the instruction for graduates occurred in library science courses taught by the librarian.

Instruction: A Spectrum of Effort

While the IUB Libraries regularly gather statistics on instruction sessions that tell us who and when, those statistics fail to capture the actual allocation of time and effort that instruction entails. This study sheds some light on the full spectrum of effort involved in instructional services. Figure 1 presents an analysis of a single participant's instructional activities broken down into different types of instructional efforts.

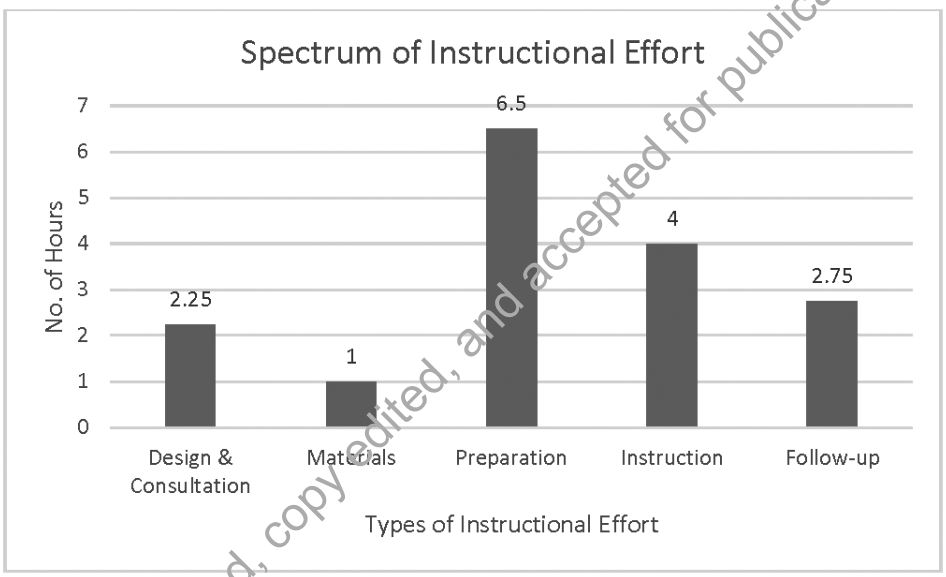

Figure 1. A bar graph shows that one participant in the Librarian Activity Project spent two days in instruction-related activities but only four hours doing actual instruction.

Preparation

Responses in follow-up interviews also indicated that instructional services include significant effort before and after the teaching session itself. When asked about activities included in instruction, participants reported a wide range of tasks necessary to delivering effective instruction sessions.

For example, librarians described their preparation time:

> I looked at my slides from last year and looked at my notes about the talk that I gave . . . I sort of took time to reflect on what was effective and what wasn't, what these students were trying to learn.

> I have to do a lot of reading. I have to create my own personal notes before I can even touch an exercise or an assignment of any kind.
>
> If it's a brand-new class, if it's the first time we've worked with this faculty member or this particular class, of course the hours will vary, but I would say that there have been times I have probably spent easily 12 hours . . . prepping.

Design and Consultation Activities

> The faculty member and I had decided to kind of overhaul the instruction for that class. It had been pretty much . . . here is this database, here is this database, here is this database. And I decided . . . to create an activity, which the students would try to engage with particular researchers on their own and then I would come back and show them some best practices.
>
> He didn't know what he wanted, truthfully. He had no idea what he wanted.
>
> If it's someone I've never taught with before, I try to actually meet with them because it's a little difficult to understand pedagogically what someone wants just from an e-mail.

Instruction Sessions Themselves

One of the few mentions of actual instruction in the transcripts was the brief comment "And then doing the session." A participant used those words after describing the preparation process at length.

And finally, follow-ups:

> So, every single student in say a 35-person class or larger, we've had classes up to 95 students, are coming back to the [reference desk], which means that they are e-mailing us.
>
> Immediately after one of those classes I get very little contact from the students, but over the past month or so, as the deadline has gotten much closer, traffic picks up from them.
>
> And then afterwards it's another couple of hours to . . . make some notes, "Did it work? What didn't work? What might you want to differently next time?"

Research: A Closer Look

The majority of research activities were in the areas of collections and performance, which in most cases were reference interactions. A small portion fell under instruction in a case where a librarian led a research-specific workshop for faculty and graduate students. Original research by librarians (usually presenting or writing) accounted for about 34 percent of research activity and about 7 percent of all activity, much of it done in collaboration with external audiences, such as partners at other institutions.

Reference Activities

Reference activities made up 13.57 percent of total activity. Wherever possible, reference activities were categorized by their primary purpose related to the mission activities of education and research. Otherwise, a typical shift at a reference desk would have been categorized as both education and research (that is, "General").

Table 7.

Research activities performed by librarians, as categorized in the Librarian Activity Project (LAP)

Activity	Category	Units recorded	Hours	Percentage of research	Percentage of all activity	Confidence interval* (of all activity)	High	Low
Research	Collections	143	35.75	41.09%	8.58%	1.34%	9.92%	7.24%
	Performance	82	20.5	23.56%	4.92%	1.04%	5.96%	3.88%
	Professional development	120	30	34.48%	7.20%	1.24%	8.44%	5.96%
	Instruction	3	0.75	0.86%	0.18%	0.20%	0.38%	0.02%
	Total	**348**	**87**	**100.00%**	**20.89%**	**1.95%**	**22.84%**	**18.94%**

*A confidence interval is a range of values that describes the uncertainty surrounding an estimate.

Table 8.

Reference services provided librarians, as categorized by mission activity in the Librarian Activity Project (LAP)

Type of reference	Units recorded	Hours	Percentage of reference	Confidence interval*	High	Low
Education	110	27.5	48.67%	6.52%	55.19%	42.15%
General	69	17.25	30.53%	6.00%	36.53%	24.53%
Research	47	11.75	20.80%	5.29%	26.09%	15.51%
Total	226	56.5	100.00%			

*A confidence interval is a range of values that describes the uncertainty surrounding an estimate.

Cultural Development: A Closer Look

As discussed earlier, the cultural development category was added during the follow-up interview process. Cultural development activities were those that could not be directly tied to either education or research specifically, but that represented important work tied directly to the mission, vision, and core values of the university. Some common examples of cultural development activities were events or exhibits for which the purpose extended beyond research or curriculum and the audience reached beyond the IU community. Twelve of 22 participants reported activities in this category.

Cultural development activities were those that could not be directly tied to either education or research specifically, but that represented important work tied directly to the mission, vision, and core values of the university.

One common characteristic of these activities was that they involved significant collaborations not only among librarians but also between librarians and multiple units on campus. Another characteristic of these activities was that they were perceived to build community and help create a unique university environment. Finally, participants had strong feelings about the value of these activities when asked why they were important considering their indirect relationship to curriculum and research. Cultural development activities were discussed at length in follow-up interviews and might best be described further in the words of the participants, who explained the broader value of such activities:

> We're not just here to get people jobs. If we are, then, you know, f—— it. Let's just be an online university.
>
> People are curious, and curiosity should be rewarded and engaged.
>
> Exhibitions, in general, are part of being a university citizen.
>
> [Exhibits/events foster] curiosity, creativity, and critical thinkers.
>
> You do have a better exhibition if it does have an argument or it's trying to say something new or draw interesting connections.
>
> And it can . . . spark curiosity and delight in all different kinds of visitors to the campus.
>
> The university prides itself on being an institution where arts and humanities are important . . . where we support cultural heritage institutions and provide all different kinds of cultural experiences for students and visitors.

Participants described the importance of the community beyond IUB:

> Our audience has never been just IU. Our audience is the world.
>
> We feel like we have a wider educational mission to educate the general public . . . We want people to see, to learn about it, to touch it, to experience it.
>
> And faculty members . . . seem to be hungering for the opportunity to work with material objects and to interpret them for the general public, to do a more type of public scholarship through their exhibitions.

> We get patrons from around the state and around the country and around the world, who come to our institution to study these artifacts, and I think that that's an important thing.

The interviews also stressed collaboration and community:

> [The] effort involves departments and units all over campus.
>
> Exhibitions are . . . great for relationship building.
>
> We partner with people from all over campus, and you never know who's going to contact us or want to use material we have for any number of purposes.
>
> I think the other reason behind this event . . . is that I think it helps build a sense of community. . . . The library and librarians in particular are one group of people who can kind of foster these communities.
>
> Community begets community and I see this as my one small . . . contribution . . . so that people pause and realize how important these sorts of things are. So, I see this . . . as . . . librarian as initiator for important activities in our communities and in our libraries.

Cultural development activities contribute to the "hidden curriculum," the behaviors, perspectives, and attitudes that are taught informally and usually unintentionally but make up part of the overall student experience:

> I think it's important because, even though it's not the written curriculum, in my opinion, it's a hidden curriculum.
>
> Businesses say what they want to hire are critical thinkers. So, how do we teach critical thinking? The humanities is a great way to teach critical thinking, and I think that . . . teaching people . . . "Hey, if you look this thing, and hold this thing in your hands, you can actually figure out what people in the past were thinking, what they were doing, what they cared about, how much money they had, who could read, who had access to information."
>
> We teach a lot of critical thinking in our classes. I think our exhibitions can . . . engage people on a level that . . . is really, really, really important if we want to keep the ideals of the university, and not just be, like, "Hey, we offer online classes, you get your certification, we stamp your degree, you go get a job, have a nice life."
>
> It enriches the instructional environment, and it allows students to learn a bit about the history that they wouldn't otherwise be exposed to.
>
> So these kinds of materials have the potential to give the students a greater connection to their university, I feel. It's important for students, and in particular students that might be having a hard time getting acclimated to the university. If they have . . . a connection to the history or the spaces that they're working in . . . they might feel more comfortable in their learning environments.
>
> Seeing a signature of Martin Luther King Jr. isn't the same as hearing about him.
>
> When they see a first folio of Shakespeare, it's really a very enriching thing for them, and they can see that it's quite different from the Penguin edition they are reading in class.
>
> You can't really quantify these kinds of things, but I think they are nevertheless important because . . . it connects them . . . with the wider world.
>
> That's part of their IU experience. . . . It's beyond the classroom that they might remember far more than they learned something in class.
>
> [Exhibits/events] give students greater understanding of cultural diversity.

"Other" Activities

Because one of the goals of this study was to examine librarian time allocation in relation to the mission of the university in terms similar to those of other faculty, education and research were given priority over other activities. However, the relative complexity of the work of librarians means that many activities cannot be strictly categorized into the main mission categories. The "Other" activity was established as a place to put activities that could not be directly associated with either education or research. For most librarians, these included internal meetings, facilities or operations oversight, breaks, or committee service. For example, Other/Performance includes normal job duties or service activities not directly tied to education or research. Interestingly, Other/Performance/Internal represents meetings with internal staff, which made up over 11 percent of all recorded activity, more than either service or professional development. These "internal" meetings did not include committee service meetings. Finally, Other/Other, almost 9 percent of all activity, includes breaks and personal time.

Discussion

LAP provided a context for conversations about librarian work demands at varying degrees at the individual, departmental, and organization level. Presentation of these results to the greater library faculty provoked thoughtful questions and conversations, and the authors continue to monitor for any observable changes brought about at least in part by the LAP results.

Regarding the stated goals of the study, particularly the first goal ("Quantify librarian contribution to the education and research missions of Indiana University [IU]"), LAP was a success. By organizing activities into categories that align with the language of institutional outcomes, the study achieved a clearer picture of librarian activities in broader contexts, especially regarding support for education. For example, while IUB Libraries has years of data on instruction and reference statistics, those statistics do not include preparation time, follow-up interactions, or the myriad other tasks needed to provide an instruction session. By including those activities, the LAP results show a more complete picture of librarians' contribution to the educational mission of the university.

On the other hand, the second goal ("Quantify librarian contribution in these areas in a way that allows comparison with other teaching and research faculty efforts") deserves further investigation. Comparing the work of librarians with other faculty by looking at the two main mission categories of research and education shows some similarities, but librarians' contributions to the research mission of the university appear lower than those of other faculty. However, the comparison can shift dramatically depending on how certain activities are interpreted and categorized. For example, internal meetings for librarians are categorized as "Other," while a research scientist would likely categorize a laboratory meeting as "Research." While a more precise comparison is not possible with the existing LAP data, we can say that both librarians and other faculty contribute significantly to education and research, albeit in different ways.

Regarding the third goal ("Discover new ways for librarians to demonstrate their impact on education and research at IU"), LAP did not uncover any new opportunities to regularly track activities to quantify along with reference and instruction. The LAP results did suggest, however, that examining the context of activities may reveal more impact than would relying on static numbers that represent a single time. There may be

Table 9.

Explanation of "other" activities performed by librarians in the Librarian Activity Project (LAP)

Activity	Category	Units recorded	Hours	Percentage of other	Percentage of all activity	Confidence interval*	High	Low
	Performance	281	70.25	46.99%	16.87%	1.80%	18.67%	15.07%
	Service	151	37.75	25.25%	9.06%	1.38%	10.44%	7.68%
	Other	145	36.25	24.25%	8.70%	1.35%	10.05%	7.35%
Other	Professional development	12	3	2.01%	0.72%	0.41%	1.13%	0.31%
	Collections	9	2.25	1.51%	0.54%	0.35%	0.89%	0.19%
	Total	598	49.5	100.00%	35.89%	2.30%	38.19%	33.59%

*A confidence interval is a range of values that describes the uncertainty surrounding an estimate.

ways in the future to gather information about instructional activities, for example, as a series of activities over time that tell a much richer and more meaningful story. There are also several examples in the LAP data where an effort reported by a single librarian entailed collaboration with several other people and units on campus. Librarian activities do not occur in isolation; rather, they are part of an ongoing network of activities. These "networks" could be worth examining to get a more nuanced view of value and impact.

By organizing activities into categories that align with the language of institutional outcomes, the study achieved a clearer picture of librarian activities in broader contexts, especially regarding support for education.

Specific areas of interest for further investigation and discussion include the activities of cultural development and education. As stated earlier, education-related activities often include ongoing collaborations, communication, and behind-the-scenes preparation that all might lead up to a single instruction session. Examining the full spectrum of these efforts could reveal more opportunities for quantifying activities and measuring impact. While the activity of cultural development represented the smallest portion of activity, the discussions of these efforts during interviews with subjects were provocative and inspiring. In a time when the value of libraries and liberal arts education are often questioned, how to answer those questions and effectively defend our value sometimes eludes us. The responses from subject interviews in the results offer a rich trove of logic, language, and sentiment that may help us formulate a more potent message to state the continued importance of libraries and liberal arts education.

Finally, for institutions wishing to conduct a similar study, the authors have a few suggestions. Obviously, high participation is crucial to obtaining a sufficient sample for analysis, and strong support from library administrators is essential. Having clearly stated goals is important so that subjects have a sense of what the result may be used for. LAP was an Institutional Review Board-approved study, thus subjects' activity tracking and interview transcripts were kept confidential, which likely also boosted participation. We also perceived a sense of enthusiasm and personal motivation to participate, possibly because participants thought the results might help them with time management or prioritizing individually or within their departments. At an administrative level, results from such a study could inform changes to organizational structure, hiring priorities, position descriptions, and strategic planning. Regardless, enthusiasm to participate in a study of this nature inevitably results in better activity logging, better interviews, and a richer data set.

…education-related activities often include ongoing collaborations, communication, and behind-the-scenes preparation that all might lead up to a single instruction session.

Brian Winterman is an information literacy and assessment librarian at the Herman B Wells Library of Indiana University Bloomington; he may be reached by e-mail at: bwinterm@indiana.edu.

Andrew Asher is an assessment librarian at the Herman B Wells Library of Indiana University Bloomington; he may be reached by e-mail at: asherand@indiana.edu.

Appendix A

LAP (Librarian Activity Project), Spring 2018

Broad goals:

1. Quantify librarian contribution to the education and research mission of the institution.
2. Quantify librarian contribution in these areas in a way that allows comparison with other teaching and research faculty efforts.
3. Discover new ways for librarians to demonstrate their impact on education and research at the institution.

Instructions:

1. Begin recording activities when you begin your workday and continue until you have finished your day.
2. . Each hour is divided into four parts. These do not represent exact 15-minute increments; rather, they are there to estimate what portion of the time in that period was spent on what activity, category, and audience.

Example: If you have a one-hour meeting at 8 a.m. that concerns supporting teaching for undergraduates and supporting research for graduate students, with some of the work being part of your instruction responsibilities and others part of other performance responsibilities, you might fill out the form like this:

1. In some cases you may "select all that apply," though please think in terms of primary activity, category, and audience.
   Note: Audience is not necessarily who you are spending the time with, but who the primary beneficiary of the effort is. E.g., for a meeting with librarians to discuss instruction for undergraduates, the audience would be "undergraduates" not "library internal." Think in terms of the result of the effort.
2. Add a short description of the activity. These will serve as prompts for us to glean more detail in follow-up interviews if necessary.
3. Bring both completed forms with you to the follow-up interview.

1	LAP Data Recording Form						Name:																		Dat
2			ACTIVITY				CATEGORY						AUDIENCE												
3			Education	Research	Other		Service	Professional Development	Instruction	Collections	Other/Performance		Library Internal	Faculty	Graduate	Undergraduate	Staff	External Academic	Other	ALL (e.g. Collections)	Shor				
4	8:00	1	x						x							x									
5		2	x						x							x									
6		3		x							x				x										
7		4		x							x				x										

Figure 2. A form used to record data for the Librarian Activity Project (LAP) depicts a one-hour meeting that involved librarian support for teaching undergraduates and for helping graduate students do research. Some of the time counted as part of the librarian's instruction responsibilities, and other work was categorized as "performance," normal job duties or service activities not directly tied to education or research.

Activity Guidelines

Education: Activities that support or fulfill the education mission of the university may include instruction (for credit or not), instructional preparation, teaching and/or learning assessment, consultations related to curricula, courses, or assignments, educational materials or displays, etc.

Research: Activities that support or fulfill the research mission of the university may include any original research or support of original research not associated with coursework.

Appendix B

				ACTIVITY					CATEGORY							AUDIENCE							
Subject	Date	Hour		Education	Research	Cultural Development	Other		Service	Professional Development	Instruction	Collections	Other Performance	Other		Library Internal	Faculty	Graduate	Undergraduate	Staff	External	Other	All (e.g. Collections)
01	2/28/2018	5:00	1																				
01	2/28/2018	5:00	2																				
01	2/28/2018	5:00	3																				
01	2/28/2018	5:00	4																				
01	2/28/2018	6:00	1																				
01	2/28/2018	6:00	2																				
01	2/28/2018	6:00	3																				
01	2/28/2018	6:00	4																				
01	2/28/2018	7:00	1																				
01	2/28/2018	7:00	2																				
01	2/28/2018	7:00	3																				
01	2/28/2018	7:00	4																				
01	2/28/2018	8:00	1																				
01	2/28/2018	8:00	2																				
01	2/28/2018	8:00	3																				
01	2/28/2018	8:00	4																				
01	2/28/2018	9:00	1																				
01	2/28/2018	9:00	2																				
01	2/28/2018	9:00	3																				
01	2/28/2018	9:00	4																				
01	2/28/2018	10:00	1																				
01	2/28/2018	10:00	2																				
01	2/28/2018	10:00	3																				
01	2/28/2018	10:00	4																				

Figure 3. A daily activity log for the Librarian Activity Project (LAP) asked librarians to code their activities into three categories: (1) university mission categories, such as education and research; (2) specific work categories, such as collections or instruction; and (3) audience, such as undergraduates or faculty). Each hour was divided into four 15-minute units.

Source: Karen P. Nicholson, "On the Space/Time of Information Literacy, Higher Education, and the Global Knowledge Economy," *Journal of Critical Library and Information Studies* 2, 1 (2018): 1.

Notes

1. The Librarian Activity Project (LAP) study was reviewed and approved by the Indiana University Institutional Review Board, Protocol # 1710595305.
2. Karen P. Nicholson, "On the Space/Time of Information Literacy, Higher Education, and the Global Knowledge Economy," *Journal of Critical Library and Information Studies* 2, 1 (2018): 1.
3. Karen P. Nicholson, "'Being in Time': New Public Management, Academic Librarians, and the Temporal Labor of Pink-Collar Public Service Work," *Library Trends* 68, 2 (2019): 130–52.
4. Deborah Hicks and Theresa J. Schindel, "Time Changes Things: Time as a Linguistic Resource for Professionals in Information-Intensive Fields/Le temps change toutes choses: Le temps comme ressource linguistique pour les professionnels dans les champs à forte concentration informationnelle," *Canadian Journal of Information and Library Science* 40, 1 (2016): 1–26; Jenny Bossaller, Christopher Sean Burns, and Amy VanScoy, "Re-Conceiving Time in Reference and Information Services Work: A Qualitative Secondary Analysis," *Journal of Documentation* 73, 1 (2017): 2–17.
5. Lora L. Lennertz and Phillip J. Jones, "A Question of Time: Sociotemporality in Academic Libraries," *College & Research Libraries* 81, 4 (2020): 701.
6. Sonja L. McAbee and John-Bauer Graham, "Expectations, Realities, and Perceptions of Subject Specialist Librarians' Duties in Medium-Sized Academic Libraries," *Journal of Academic Librarianship* 31, 1 (2005): 19–28.
7. Rayla E. Tokarz, "Beyond Orientation: A Look at Scheduled Time and Unscheduled Time in a New Librarian's First Sixty Days," *Library Leadership & Management* 33, 1 (2018).
8. Dana M. Miller and Teressa Keenan, "The Time Management Study as a Tool for New Technical Services Managers," *Library Leadership & Management* 30, 1 (2015).
9. Dilys E. Morris, Joanne M. Bessler, Flo Wilson, and Jennifer A. Younger, "Where Does the Time Go? The Staff Allocations Project," *Library Administration & Management* 20, 4 (2006): 177–91.
10. Anthony W. Ferguson and John R. Taylor, "'What Are You Doing?' An Analysis of Activities of Public Service Librarians at a Medium-Sized Research Library," *Journal of Academic Librarianship* 6, 1 (1980): 24–29.
11. Jeanne M. Brown, "Time and the Academic Librarian," *portal: Libraries and the Academy* 1, 1 (2001): 59–70.
12. Albert N. Link, Christopher A. Swann, and Barry Bozeman, "A Time Allocation Study of University Faculty," *Economics of Education Review* 27, 4 (2008): 363–74.
13. Daniel R. Gross, "Time Allocation: A Tool for the Study of Cultural Behavior," *Annual Review of Anthropology* 13, 1 (1984): 519–58; H. Russell Bernard, *Research Methods in Anthropology: Qualitative and Quantitative Approaches*, 6th ed. (Lanham, MD: Rowman & Littlefield, 2017), 316–25.
14. Gross, "Time Allocation," 538.
15. Ibid., 537.
16. Jeanne Altmann, "Observational Study of Behavior: Sampling Methods," *Behaviour* 49, 3–4 (1974): 231.
17. Ibid., 231–32.
18. Gross, "Time Allocation," 539.
19. H. Russell Bernard and Peter D. Killworth, "Sampling in Time Allocation Research," *Ethnology* 32, 2 (1993): 207–15.
20. These values vary both on the frequency of the observed activity level of acceptable error. H. Russell Bernard provides a helpful chart summarizing the number of observations needed to determine the accuracy of observed frequencies; see Bernard and Killworth, "Sampling in Time Allocation Research," 209–11.