

**A Time-Budget Study of the
George Mason University
Libraries' Liaison Program**

James E. Nalen
University Libraries, George
Mason University, Fairfax, VA¹

Abstract

Time-budget studies of programs and services can form a useful part of a library's assessment toolkit. Analysis of time-budgets may reveal how staff are responding to changes in the institutional environment through their allocation of time among competing sets of necessary activities. In fiscal year 2006, the George Mason University Libraries employed a time-budget study to analyze the workload of librarians within the Libraries' liaison program. The liaison program is situated in an environment of rapid growth in graduate education programs and sponsored research. Twenty librarians were required to report activities occupying each half hour of each day during five weeks that had been selected through systematic sampling. Activities were coded using a category system that had been deductively constructed, with

considerable input from the librarians themselves. The time budget instrument consisted of an Excel worksheet. Excel functions within the worksheet automatically calculated the percentage of time spent on any given activity. Frequency tables, histograms and other descriptive statistics were generated from the aggregated data. The data lent themselves to comparisons between individuals and between sub-groups (e.g. liaisons at a particular library site) and the population as a whole. These statistics and comparisons helped to provide a better understanding of the complex nature of liaison work, while also challenging some assumptions about the Libraries' liaison program. The time-budget methodology was found to be constrained by the seasonal nature of liaison librarians' work, as well as by a certain level of demand characteristic bias. While the time budget survey revealed differences in how librarians allocate time to different aspects of the liaison program, the methodology did not help the Libraries' to fashion an equitable redistribution of workload among librarians.

Introduction

Time-budget studies of programs and services can form a useful part of a library's assessment toolkit. Analysis of time-budgets may reveal how staff are responding to changes in the institutional environment

¹ James E. Nalen, Planning, Assessment & Organizational Development Coordinator, University Libraries, George Mason University, Fairfax, VA 22030. Tel. 703-993-2016 (Office), 703-993-2200 (Fax), jnalen@gmu.edu, <http://library.gmu.edu>

through their allocation of time among competing sets of necessary activities. The following is a report on a time-budget study conducted at the George Mason University Libraries during the 2005-2006 academic year. The objectives and methodology for the study are described and summary results are presented. A short discussion of the study's limitations is also provided.

Objectives

The need for a liaison workload analysis grew out of an unmet charge to the Library Liaison Program Task Force. The 2002 Task Force Report recommended completion of a "liaison workload analysis that includes all aspects of liaison and non-liaison duties" and determination of "how to reallocate workload and make most effective use of all liaisons' knowledge, skills, and abilities". The Report hoped that a workload analysis would help to

- Assess the distribution of liaison responsibilities whenever a position becomes vacant, a program is relocated to another campus, or a program is offered on multiple campuses;
- Support the need for more liaisons with fewer academic department responsibilities;
- Understand the trade-off between service and outreach to academic units, day-to-day responsibilities (for example, reference desk,

meetings), and library/university responsibilities;

- Highlight the logistical problems involved for liaison librarians at the distributed campuses (for example, travel between campuses);
- Create a structure for the liaison librarian program that is flexible enough to adapt to the distributed nature of the University and that recognizes that participation in the liaison program is not limited to the liaison librarians themselves;
- Determine whether full-service reference is needed at both libraries on the Fairfax campus, and whether professional level reference service is required on weekends.

The Liaison Advisory Team took up this charge in 2004-2005, investigating software solutions for reporting and analyzing workload data and generating a list of liaison activities. The team identified Analyzer Plus as a possible software solution. The strength of this software lies in allowing time spent on a variety of tasks to be "charged" to individual clients, in this case academic departments. The software supports some reporting functions, and the data may be exported to Microsoft Access for further manipulation and reporting. However, several significant drawbacks to this software were subsequently identified: 1) Since the team anticipated loading this software on each liaison's personal computer,

it was unclear how the individually-created databases could be merged in Microsoft Access in order to generate statistical comparisons between liaisons; 2) It was evident that use of the software would require significant amounts of training; and 3) Because of the wide range of liaison activities identified by the team, liaisons would need to spend significant amounts of time logging these in exceedingly small increments of time.

While the software was well-suited to meeting the original taskforce charge of using the workload analysis to reallocate liaison assignments, it could not accommodate the relatively unstructured nature of liaison work. First, in order to accurately "charge" time to academic departments, time would need to be recorded in extremely small increments or using an expansive interval scale. Given the nature of liaison work, it was felt that such an approach would introduce non-response bias at worst or would invite elements of the "continuum of resistance" at best. Secondly, having abandoned an approach involving small increments of time, it appeared impossible to tie larger increments of time to tasks done for specific academic departments, other than for some of the activities associated with collection management, liaising, research consultations and subject instruction. Thus, it was

decided that a time-budget, rather than a workload, approach would provide information on the allocation of time within the liaison program, although it would not necessarily aid in decision-making about specific liaison assignments.

Approaches to the Measurement of Workload and Time Allocation

There is an extensive body of literature on the measurement of workload and time allocation in library settings; the following review is not meant to be exhaustive but to convey the breadth of objectives and methods associated with workload studies, as well as to provide insight on why a time-budget methodology was selected for the present study.

Hitchingham (1986) reported on a workload study of librarians at Oakland University. In this study, 12 librarians were asked to record activities in 15-minute increments over the course of 7 consecutive days. Subsequently, the librarians were asked to code these activities using both a function code (circulation, acquisitions, reference etc.) and an activity code (word processing, supervision filing etc.). Hitchingham performed a cross-tabulation between the functions and activities. Metz (1991) took a rather different approach to measuring the collection development workload of librarians at Virginia Tech.

He established a workload formula that incorporates the number of academic departments and centers for which a librarian is responsible, the number of full-time tenure track faculty in those departments, the number of firm orders placed by a librarian in a given year, the quantity of a librarian's call number responsibilities (measured in inches), and the number of standing orders and continuations associated with a librarian's account. After weighting each of these components and calculating the resulting number of percentage points for each librarian, Metz was able to express the relative collection development workload of each librarian. Jenda (1994) reported on a time allocation study of 6 subject librarians at the University of Botswana. The librarians were asked to record starting and ending times for an established list of activities over the course of 3 months. Everhart (1997) used work sampling to analyze the impact of automated circulation systems in school library media centers. Staff at several library media centers were outfitted with random alarm mechanisms (RAMs); the RAMs were programmed to vibrate at random intervals at which staff were instructed to record a tally within an appropriate activity category. The resulting percentages, based on 20 days' worth of data, were then compared with ideal percentages established by a

panel of experts. Mathenia (2002) reported on a workload survey of 9 reference librarians at Montana State University Bozeman. Respondents were asked to estimate time spent on a set list of activities.

Roberts (1994) and Brown (2001) pursued singular approaches to measuring workload. Roberts recorded her activities over a period of 50 days by randomly selecting a number from 1 to 59 at the start of each day. If 1 were selected, she would record her activities at 8:01, 9:01, 10:01 etc. throughout the day. Her observations were then coded by type of activity and by level (i.e. clerical or professional in nature). She then used the information to recommend hiring a part-time clerical assistant rather than making her own position a full-time one. Brown reported on her use of an individual log for capturing information about her work activities over a period of several years. Analysis of this log revealed shifts in the balance between job, scholarship and service over time.

Gothberg & Riggs (1988) analyzed several facets of library directors' use of time. They surveyed 159 academic library directors, asking respondents to assign a percentage of time spent on a list of activities; to rank a series of statements related to the delegation of authority; to rank a list of top 10 time-wasters; and to

rank a set of statements on dealing with conflict. Gothberg & Riggs then correlated these measures for further analysis. Schreiner-Robles & Germann (1989) collected 54 completed questionnaires from reference-bibliographers in the humanities, social sciences and sciences, respectively, at 21 Association of College & Research Libraries (ACRL) institutions. Respondents provided average numbers of hours spent performing a variety of activities in the areas of job, service and scholarship. The authors questioned how research could be accomplished given the amount of time devoted to job. More recently, Hernon, Powell & Young (2004) took a different tack in looking at library directors' use of time. They asked 6 library directors from ACRL institutions and 6 from ARL institutions to separately log routine and non-routine activities over the course of 12 consecutive days during a fall semester. The diary for non-routine activities asked directors to record more detailed information about each activity, including a ranking of each activity's typicality. The authors then interviewed each of the directors to gain further insight into their attitudes, beliefs etc. A final categorization resulted in a list of 44 separate activities; frequencies were generated for each of these and then compared with previous research.

It is apparent in workload studies that the methodology adopted is closely related to one's research objective. Gothberg & Riggs (1988) and Hernon, Powell & Young (2004) looked to draw comparisons between individuals at different institutions, and their methodologies reflect their need to analyze time allocation in connection with other variables. Roberts (1994) and Brown (2001) adopted methods to establish how they as individuals allocated their time. The majority of the studies reviewed here were conducted with an eye towards answering various management questions, and the methodologies used helped generate useful answers to those questions.

In selecting a time-budget study to look at the workload of liaison librarians at George Mason University, primary consideration was given to the management questions raised in the Library Liaison Program Task Force Report; the data collected through such a method would need to support the type of analysis implied by these questions.

The approach of Gothberg & Riggs (1988), Schreiner-Robles & Germann (1989), and Mathenia (2002) in asking respondents to supply estimated numbers of hours or percentages to a set list of activities clearly limits the usefulness of any data collected. Because librarians tend to work a wide range of hours, it is difficult to draw any meaning from

comparisons between the numbers of hours worked on any given activity. Percentages offer a great improvement over the number of hours; however, self-reported estimations of percentages rarely reflect reality. The periodicity of the approach is also important. Studies such as Hitchingham (1986) that do not collect data at different points in time are open to challenge.

The choice then is to use some sort of method that records actual activity at various points in time (or over an extended period of time as in Brown [2001]) and that normalizes data through the use of percentages. A further consideration is the use of deductively or inductively constructed sets of categories. In the latter, the researcher establishes a set of categories in which subjects are to record their time. In the former, the subjects themselves are involved in the construction of categories.

From there, another choice presents itself: whether to utilize a time diary (time-budget) approach, in which subjects record starting and ending times for activities or record activity codes within regular intervals of time; or a workload sampling approach, in which subjects log tallies within categories at randomly selected points in time. Everhart (1997) champions the latter approach, cautioning that the use of the time-budget is

ill-suited to the flexible and unstructured nature of library work. While data collected using the time-budget methodology are open to such challenges with respect to validity, the approach of researcher and respondent jointly constructing the categories to be used in a time-budget study helps to ensure that subjects are interpreting the categories in a similar way; combining this deductive construction of categories with a sampling strategy that collects data at different points in time increases the reliability and validity of data generated through this approach.

Methodology

Setting and Participants

George Mason University is a state-supported university in Northern Virginia with approximately 17,529 undergraduate, 6,758 master's, 1,748 doctoral, and 742 professional (law) degree seeking students in the 2005-2006 academic year; 53% of these students were enrolled full-time, and approximately 4,000 students lived on campus. The University offered 62 undergraduate, 69 master's, 24 doctoral and 1 professional (law) degree programs on campuses in Arlington, Fairfax and Prince William Counties, as well as at a newly-opened center in Loudoun County.

This time-budget study looks at how the librarians directly associated with the

University Libraries' liaison program—15 liaison librarians, 4 department heads and the instruction coordinator in the 2005-2006 academic year—allocated time to the four primary tasks associated with the program as well as to more general activities. The 15 liaison librarians were each responsible for collection development, reference, instruction and outreach activities in support of assigned academic departments and centers. The 4 department heads supervised liaison librarians within their respective campus libraries, while the instruction coordinator provided overall direction to the instructional activities of each liaison; both the department heads and instruction coordinator participated to some extent in collection development, reference, instruction and outreach activities.

Sampling

The study employed a modified form of systematic sampling: every 10th week beginning with September 25 - October 1 was selected to create the sample (the first week was not selected randomly, hence the qualification). The remaining weeks were December 4 - December 10, February 12 - February 18 and April 23 - April 29 (a fifth sample week [July 2 - July 8] was dropped due to insufficient data).

Categories

The category system employed in the study was constructed deductively with considerable input from liaison librarians themselves. During the 2004-2005 academic year, the Liaison Advisory Team developed an initial list of roughly 40 activities to be tracked. In meetings between the planning, assessment & organizational development coordinator and the liaison librarians and department heads, this list was further refined to include 19 categories of activity, with each intended to be mutually exclusive, explicit and exhaustive. Each category was further assigned to a more general roll-up category for analysis purposes. Below are the roll-up and activity categories:

- Collection Management: Selecting, Searching & Tracking; Troubleshooting Collections; Collection Assessment; Gifts; Database Evaluation; Vendor Demos
- Instruction: Instruction Preparation; Subject Instruction; General Instruction; Software Training
- Reference & Research Assistance: Consultation; Reference Desk; Other Scheduled Reference
- Outreach & Marketing: Library Publications; Liaising
- Other (General Activities): Administrative Travel; Circulation / ILL / Reserves; Training and Development; Professional Involvement; Library Operations

Data Collection & Analysis

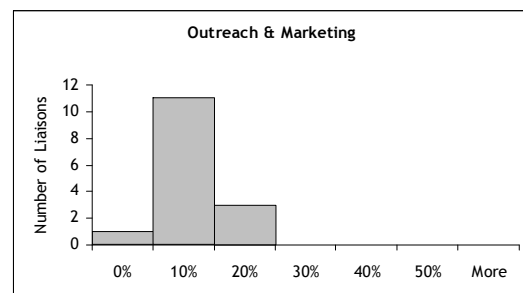
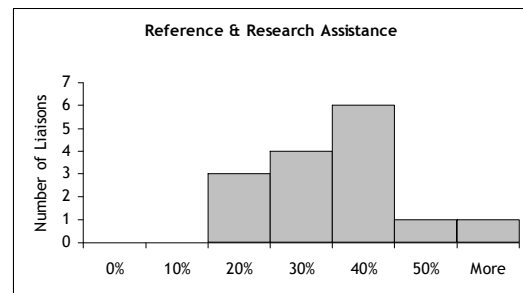
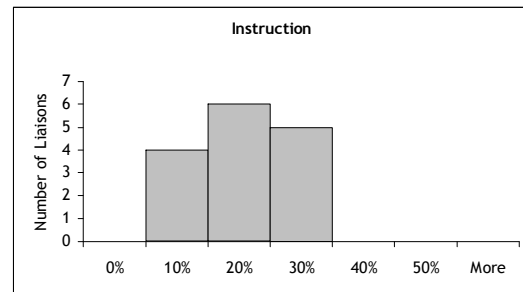
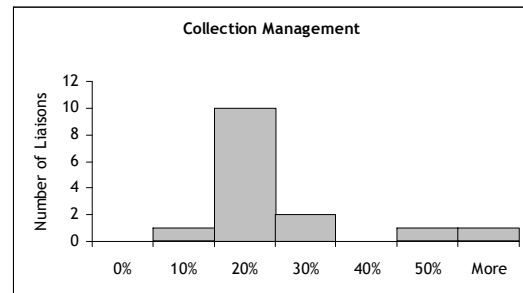
Librarians were asked to record data in half-hour time increments using a time-budget. In each half-hour time block worked, librarians placed a code representing an activity that they were primarily engaged in during that time period. This study made no attempt to record secondary activities occurring during the same half-hour period. The time-budget worksheet automatically calculated the number of hours as well as the percentage of time spent on each activity. Raw data for each week was ultimately aggregated, and values for the roll-up categories were calculated. Analysis of the data used the reported percentages of time spent on each activity; separate analyses were performed for the different sub-groups in the study, i.e. liaison librarians, managers (department heads and the instruction coordinator), liaison librarians and department heads at specific campus libraries, and liaison librarians at specific campus libraries. Only general findings are presented below.

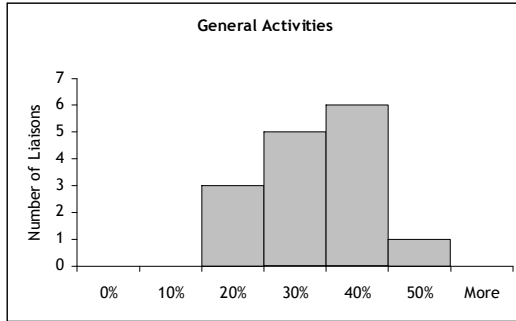
Results and Discussion

The librarians reported working a total of 3008.5 hours over the course of four sample weeks.

The following set of histograms shows the spread in activities among liaison librarians. For example, the

collection management histogram shows that 1 liaison librarian spent up to 10% of his/her time on collection management activities, 10 up to 20%, 2 up to 30%, 1 up to 50%, and 1 more than 50%.





INSTRUCTION	14.5%
Instruction Preparation	7.9%
Subject Instruction	4.5%
General Instruction	1.6%
Software Training	0.5%

Liaison librarian averages for all activities, including the roll-up categories are provided below:

REFERENCE & RESEARCH ASSISTANCE	30.4%
Consultation	11.6%
Reference Desk	17.2%
Other Scheduled Reference	1.7%

OUTREACH & MARKETING	6.5%
Library Publications	1.0%
Liaising	5.5%

Several of the activity categories may be combined to calculate the percentage of time spent on service to assigned academic departments:

GENERAL ACTIVITIES	28.2%
Administrative Travel	0.7%
Circulation/ILL/Reserves	0.5%
Training and Development	2.9%
Professional Involvement	5.6%
Library Operations	18.5%

SERVICE TO ASSIGNED ACADEMIC DEPARTMENTS	42.0%
Collection Management	20.4%
Subject Instruction	4.5%
Consultation	11.6%
Liaising	5.5%

Some of the salient findings from the analysis of data are:

COLLECTION MANAGEMENT	20.4%
Selecting, Searching & Tracking	13.7%
Troubleshooting Collections	1.9%
Collection Assessment	3.1%
Gifts	0.6%
Database Evaluation, Vendor Demos	1.1%

- Liaison librarians, on average, spend
 - 30.4% of their time on reference & research assistance
 - 28.2% on general activities
 - 20.4% on collection management

- o 14.5% on instruction, and
 - o 6.5% on outreach & marketing.
- There is less variation in the percentages of time liaisons spend on outreach & marketing and instruction activities than on general, reference & research and collection management activities. This suggests that liaisons experience similar demands and/or make similar assumptions with respect to instruction and outreach, but experience dissimilar demands and/or make dissimilar assumptions when it comes to collection management and reference work.
- Liaisons spend slightly more time providing reference & research assistance at the reference desk (17.2%) than in a research consultation setting (11.6%). In fact, four liaisons spend more time on the latter than the former.
- There are small differences in how liaisons at the various campus libraries allocate their time on average; however, an assumption that liaisons outside of the main library focus their efforts on a different set of activities is not borne out by the data.
- The four department heads and the instruction coordinator
 - o provide some direct support to the liaison program: they spend, on average
 - o 68.6% of their time on general activities
 - o 15.6% on reference & research assistance
 - o 6.9% on instruction
 - o 4.5% on collection management, and
 - o 3.4% on outreach & marketing.
- Without the instruction coordinator, the group of managers spends
 - o 74.2% of its time on general activities
 - o 14.6% on reference & research assistance
 - o 5.6% on collection management
 - o 3% on outreach & marketing, and
 - o 2.6% on instruction.
- If we look at the seven liaisons below the median of 41.7% on the proxy for service to assigned academic departments, no clear picture emerges of the trade-offs involved in spending more time on work for academic departments (i.e. collection management, subject instruction, consultations and liaising). Five of these seven score above the median on time spent on general activities, four on instruction, three on outreach & marketing, three on reference &

research assistance, and one on collection management. Time spent on general activities, general instruction and instruction preparation perhaps is more likely to detract from time spent on service to academic departments.

Conclusions

The results of the time-budget study challenged a number of assumptions about the liaison program while helping to answer some of the management questions raised by the Library Liaison Program Task Force report. However, several limitations to the study remain.

While the study featured controlled observational methods, the validity of the data may be challenged to the extent that participants coded activities correctly. The study may also be biased by demand characteristics: while the study is focused on actual behavior, some time may have been coded in terms of the attitudes (even aspirations) of the participants—especially where participants may have wanted to conform to the perceived expectations of library managers.

Unlike the methodology used by Metz (1991), the time-budget study does not lend itself readily to readjustment of workload. While it was possible to rank liaisons by combining several activities that can be considered directly related

to academic department assignments, it is not possible to tease out which assignments have an impact on workload.

Finally, while the study identifies averages for various activities, it cannot recommend how much time ideally should be spent on these activities. Everhart's (1997) approach in comparing her results with ideals established by a panel of experts is a worthwhile one. Perhaps the baseline data generated by this study may stimulate thinking by library administrators about whether liaison librarians are spending time on the right things.

References

- Brown, Jeanne M. (2001). Time and the academic librarian. *portal: Libraries and the Academy* 1(1): 59-70.
- Everhart, Nancy. (1997). Work sampling: The application of an industrial research technique to school library media centers. *Library & Information Science Research* 19(1): 53-69.
- Gothberg, Helen M., & Riggs, Donald E. (1988). Time management in academic libraries. *College & Research Libraries* 49(2): 131-40.
- Hernon, Peter, Powell, Ronald R., & Young, Arthur P. (2004). Academic library directors: What do they do? *College & Research Libraries* 65(6):537-562.

- Hitchingham, Eileen E.
(1986). Academic librarians' workload. In Danuta A. Nitecki (Ed.), *Energies for Transition: Proceedings of the Fourth National Conference of the Association of College and Research Libraries, Baltimore, MD, April 9-12, 1986* (pp. 133-138). Chicago: ACRL.
- Jenda, Claudine Arnold.
(1994). Management of professional time and multiple responsibilities in a subject-centered academic library. *Library Administration & Management* 8(2): 97-108.
- Mathenia, Brenda. (2002). Reference team workload survey 2001: The Libraries, Montana State University - Bozeman. *PNLA Quarterly* 67(1): 14-16.
- Metz, Paul. (1991). Quantifying the workload of subject bibliographers in collection development. *Journal of Academic Librarianship* 17(5): 284-87.
- Roberts, Justine. (1994). Work sampling in a one-person library. *Bulletin of the Medical Library Association* 82(2): 216-218.
- Schreiner-Robles, Rebecca, & Germann, Malcolm.
(1989). Workload of reference-bibliographers in medium-sized academic libraries. *RQ* 29(1): 82-91.