Assessment and Visualization for Library Staff

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Northeastern University Libraries

May 8, 2018
BLC Expanding Knowledge Webinar Series

Konstantin Starikov
Head, Access Services
Boston University Alumni Medical Library
What happens in the space between?
Data Collection  Structuring and Cleanup

A → B  Interpretation
Assessment and visualization are both analytical tools we can use to understand user needs, communicate findings, and change practices and policies.
Assessment
assessment, n.

View as: Outline | Full entry

Pronunciation: /əˈsesmənt/

Forms: Also 15–16 assessment. See aptet. assessment n.

Frequency (in current use): 6


The action of assessing; the amount assessed.

1. The determination or adjustment of the amount of taxation, charge, fine, etc., to be paid by a person or community.

1548 Hall's Visions. Henry VIII I. xxx The assessment of whiche fines, were appoynted to Thomas Cromwell.
1591 In J. B. Heath. Some Act. Worshipful Company of Grocers (1869) 85 That 8000l. should be levied out of the Halls of the Cittie, by an equal and indifferent assessment.
1764 R. Burr Hist. Poor Laws 196 Charges...to be raised by an assessment on the several parishes, in proportion to the number of poor they send to the said house.
1861 C. H. Pearson Early & Middle Ages Eng. 181 Even adultry is still matter of assessment.
5.


1862  L. ANDREWS *Settl.* (1856) I. 458  It hath been held no way safe for us to make our own assessment.
1873  G. GRUBE *Hist. Greece* XI. ii. lxxvii. 367  In the comparative assessment of Hellenic forces.

b. *Educ.* The process or means of evaluating academic work; an examination or test. Cf. *continuous assessment* *n.* at *continuous adj.* Special uses.

1956  H. LUCKES *Secondary Mod.* iv. 112  What is needed is...to find new means of assessment.
1965  *Nursing Times* 5 Feb. 205/1  Agreement was reported upon the payment of £5 to nurses in non-psychiatric hospitals upon passing the preliminary or hospital examination or assessment.
1972  *N.Z. News* 26 Jan. 3/5  The Post Primary Teachers' Association is pressing for internal assessment in place of the examination at fifth form level.
1985  *Washington Post* 18 June 84/5  Test scores and core curriculum are not the answers...That is why individual assessments are necessary.
Library Assessment

Library assessment is a structured process:

• To learn about our communities
• To respond to the needs of our users
• To improve our programs and services
• To support the goals of the communities
Assessment, like cooking, is something of an art with a creative dash of qualitative and quantitative data crunching for texture and flavor. Combining complimentary dishes into tasty meals leads to good reviews and repeat customers. Assessment examines how what the library provides impacts and/or is perceived by users and guides strategic planning discussions and development of future services or resources.
Library Assessment

Assessment in the MIT Libraries: Assessment staff

Assessment in the MIT Libraries

The Assessment Librarian develops, coordinates and oversees library-wide assessment efforts such as the triennial user survey, manages collection and input of data for accreditation and other centralized reports, and develops and supports assessment efforts for the Libraries.

MIT Libraries' User Experience and Web Services Program

The User Experience & Web Services Program is responsible for gathering qualitative and quantitative data to inform the current effectiveness of web services and possible improvements using best practices. It also provides consulting services and collaborates with other departments and teams within the MIT Libraries, primarily in designing appropriate methodologies for user research related to service and interface improvements.

The UXWS staff are part of the Technology Planning, Integration, and Experience (TPIE) department in the MIT Libraries.

Assessment Librarian

Lisa R. Horowitz

Contact:
lisah@mit.edu
Room 14S-128M
617.253.9353

How can Lisa help you?
The Assessment Office collects, maintains, and reports data necessary to evaluate the adequacy and utilization of the library’s services and the impact of those services on the UNH user community. Its analyses support data-driven decision making and program development at all levels of the library organization, and inform the library’s reports to regional and national data banks and accreditation agencies.
Library Assessment

Library & Technology Services

Collections, Access and Technical Services

Mark Paris
Collections Analysis Librarian

My role is to analyze the library's data and give it context to inform decision-making processes with the goal of providing world-class resources and services to the Brandeis community and beyond.
Library Assessment

The Assessment Committee

The purpose of the Assessment Committee is to coordinate library assessment activities across BU libraries. The Committee conducts both qualitative and quantitative research to understand faculty and student scholarly needs and to support data driven decision making in the libraries.

In March 2016 the BU Libraries Assessment Committee surveyed BU faculty, graduate students, and undergraduate students to determine their use of and satisfaction with current library services and resources. The quantitative and qualitative data have been analyzed and the results are now available in our Survey Report.

The report covers findings from the survey about the libraries' collections, including opinions on the resources provided by the libraries, their use, and how they are found. The support the libraries provide for research at BU, the libraries' support of teaching and learning at BU, and the libraries as physical locations for study, collaboration, accessing the collection, and assistance. A technical appendix describing survey methodology and details on the assumptions behind the statistics is included in the report.

The survey instruments and the anonymized data are openly available for reuse in Boston University's Institutional Repository, OpenBU.

The Committee wishes to thank all of the students and faculty who have taken our surveys. The response rates were terrific, and the data helps to drive real improvements to the BU Libraries system. Below are some of the winners of the iPad mini prizes.

Diane Heikkinen, Clinical Associate Professor in Sargent
Johanna McInnes, graduating senior in ENG
Christopher Hartmann, graduating student in ENG

Library Assessment

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Learning Commons are borne from user need and created from user input. The rapidly changing needs of students require constant refinement of the services; refinement based on the feedback of primary users is integral to the success of a service such as a learning commons. While all units in the Learning Commons @ UConn keep their own quantitative data on the number and nature of their services, there has not been assessment on the general user satisfaction of the Commons as a whole. As the nature of a Learning Commons is highly user-centric, it is imperative that the library be aware of user perceptions of the space and services to ensure they are continually providing what the students need. In order to measure how the UConn Learning Commons is serving students, especially undergraduate students, an online survey was administered.
Research and Instruction Librarian (Two Openings)

Below you will find the details for the position including any supplementary documentation and questions you should review before applying for the opening. To apply for the position, please click the Apply for this Job link/button.

If you would like to bookmark this position for later review, click on the Bookmark link. If you would like to print a copy of this position for your records, click on the Print Preview link.

Bookmark this Posting | Print Preview | Apply for this Job

Posting Details

Position Information

<table>
<thead>
<tr>
<th>Posting Number</th>
<th>A488</th>
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</thead>
<tbody>
<tr>
<td>Job Title</td>
<td>Research and Instruction Librarian (Two Openings)</td>
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Key Responsibilities

Develop and provide innovative and effective library instruction and in-depth research support for faculty and students in liaison disciplines.

Develop and provide support for quantitative and/or qualitative data use, interpretation, visualization, and management in close collaboration with Research and Instructional Support colleagues, including the GIS and Data Instructional Technology Librarian.

Create programming, resources, projects, and other forms of support for digital scholarship in one or more areas such as network analysis, text analysis/mining, image analysis, mapping, or other technologies or methodologies.
1. Knowledge of Assessment in Libraries of Higher Education
2. Ethics
3. Assessment Methods and Strategies
4. Research Design
5. Data Collection and Analysis
6. Communication and Reporting
Proficiencies for Assessment Librarians

7. Advocacy and Marketing
8. Collaboration and Partnerships
9. Leadership
10. Management
11. Mentoring, Training, and Coaching
6. Communication and Reporting

The assessment librarian serves as a catalyst for change within the library by delivering evidence and analysis to fuel better decision making. The assessment librarian:

6.1 Utilizes data visualization tools and techniques with both qualitative and quantitative data to communicate assessment results. Understands the purpose of charts, graphs, and tables and uses them correctly.
6.2 Prepares and formats data for decision-making processes by both internal and external stakeholders. Demystifies basic metrics and statistics for users.

6.3 Writes compelling narratives, creating reports that follow basic graphic design rules and include evidence-based, actionable analysis.

6.4 Communicates effectively in oral and written communications. Uses multiple channels to communicate results, such as presentations, as well as staff meetings, via email and LibGuies, etc.
Library Assessment: Home

Contents

- Library Statistics
  Links to specific tools and data collection sets for statistical data. Selected Emory Libraries statistics for current year. ARL Statistics (Emory, as reported to Association of Research Libraries), including comparison data, and miscellaneous statistics such as Academic Libraries Survey.

- Assessment Integration Group (AIG)
  AIG is the Assessment Group for Units reporting to the University Librarian and including membership from other campus libraries and relevant groups.

- Assessment Plan/Report & SACS
  Includes Library Assessment Plan prepared for the University annually and documents related to SACS re-accreditation reporting (2013)

- Library Facilities Entry Reports
  Summary reports of visits by Emory community users and visitors.

- Library Surveys
  Data and reports from annual library survey, earlier LibQUAL+, etc.

- Reports, Publications & Misc
  Reports and publications representing some of Emory’s Library Assessment activities; includes University Libraries Scorecard and Presentations at the Library Assessment Conference

- University Data
  Emory University facts and figures, enrollment data (for FTE and library assignment), faculty data, etc.

- Other Resources
  Includes table of Library Comparison Institutions (Peers)
UNCG University Libraries Assessment Information: Statistics

This guide provides results from assessment studies at the UNCG University Libraries

Libraries Statistics Dashboard

The dashboard provides snapshots of statistics
- Libraries Statistics Dashboard

Libraries' Annual Statistics

- 2016-17
- 2015-16
- 2014-15
- 2013-14
- 2012-13
- 2011-12
- 2010-11
- 2009-10
- 2008-09
- 2007-08

ACRL reports

Each year the Libraries submits statistics to the Association of College and Research Libraries
- ACRL Report 2016-17
- ACRL Report 2015-16
- ACRL report 2014-15
- ACRL report 2012-13
- ACRL report 2011-12
- ACRL report 2010-11
- ACRL report 2009-10

ASERL statistics

The Libraries are a member of the Association of Southeastern Research Libraries and our statistics are included in their reports.
- ASERL statistics
ARL Statistics

UNIVERSITY LIBRARIES
UNIVERSITY OF WASHINGTON

Quick Figures
2016
Fiscal Year

Total Library Expenditures: $44,407,936
Collections Expenditures: $16,819,463
Total staff: 436
Volumes held: 9,021,092
Electronic books (ebooks): 977,481
Electronic books (ebooks) only: 6,032,231
Active library users: 5,688,559

Expenditures
- Total Salaries and Wages
- Collections Expenditures
- Other Operating Expenditures

Libraries use
- Transactions (active
  recorded): 6,932
  5,688
  4,634
- Library visitors
  6,932
  5,688
  4,634

Collections
- Volumes held (includes ebooks): 9,021,092
- Electronic books (ebooks) only: 6,032,231

Staff
- Student staff
- Support staff
- Librarians and Professional
- Other staff

Embed Code

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Link
https://public.tableau.com/views/ARL!
The UNIVERSITY OF WASHINGTON LIBRARIES is one library serving three campuses and ranked in the TOP TEN of U.S. public research universities according to the Association of Research Libraries (ARL).

ABOUT THE UW LIBRARIES

ANY TIME, ANY PLACE LIBRARY
- Resources and services available to UW community 24/7
- Over 1.5 million library-owned journal articles downloaded
- 600,000 electronic books
- 1 million locally digitized items
- Digital scanning and delivery of UW Libraries print journal articles free of charge to UW community
- Reference services available 24/7
- Odegaard Undergraduate Library open continuously from noon on Sunday through 8 p.m. Friday
- 10 million separate log in sessions to 300 Libraries licensed databases
- 15,000 reference questions answered online

PHYSICAL FACILITIES AND ANNUAL USE
- 16 libraries including UW Seattle, UW Bothell, UW Tacoma and Friday Harbor
- Major renovation of Odegaard Undergraduate Library completed, including new Research and Writing Center
- 5 million visits to library facilities, 92% of visits are by UW students, 600,000 weekly visits to Succotz and Allen Libraries during the academic year
- 8 million print volumes
- 5 million check-outs and renewals of materials from print and media collections
- 350,000 visits to the Research Commons
- 30,000 reference questions answered in person
- 1,500 library instruction sessions reach 40,000 students

CONTRIBUTION TO EXCELLENCE

TEACHING, LEARNING AND RESEARCH
- 70 subject librarians support faculty and student research
- Prestigious Library Research Award for Undergraduates
- Co-sponsor of UW Center for Teaching and Learning
- Odegaard’s state-of-the-art Active Learning Classrooms (ALCs) hold over 90 courses in 2013-14; the ALCs encourage student engagement and active learning
- The Research Commons provides programs that foster interdisciplinary conversation and strengthens graduate student skills in organizing, publishing and funding research
- $45 million Libraries endowment contributes to a margin of excellence

FACULTY AND GRADUATE RESEARCH
- Data from Libraries 2013 Internal Survey, 5-point scale
- 95% are satisfied with the Libraries (4.5/5)
- 93% rate collections as very important to their work (4.4/5)
- 90% rate the Libraries as making a major contribution to keeping current (4.4/5)
- 93% rate the Libraries as making a major contribution to their research productivity (4.6/5)
- 97% of graduate and professional students rate the Libraries as making a major contribution to their academic success (4.4/5)

GLOBAL LEADERSHIP
- During 2013-14, UW Libraries staff authored 56 publications, taught 16 credit courses, received and worked on 8 grants, made 172 presentations at professional meetings and served as chairs for 24 professional organizations
- Winner of Association of College and Research Libraries Excellence in University Libraries Award
- More librarians selected for competitive leadership development programs than any other research library
- Regional and global impact through Pacific Rim Digital Library Alliance, Oceania Coast Alliance, HathiTrust, International Librarianship, Regional Medical Library, HENA/IA, assessment leadership and diversity efforts

University of Washington Libraries Box 352000 Seattle, WA 98105-2000 (206) 543-2500

May 2015
Library Assessment: 2016 LibQUAL+ Survey

You Spoke. We Listened.

University of Delaware Library 2016 LibQUAL+ Survey

Most Important to You:

- Undergraduates
  - Quiet Space
  - Comfortable & Inspiring Space
  - Current Technology

- Graduates/Faculty
  - Library Website
  - Print & Electronic Journals
  - Easy-to-use Access Tools

You Say Our Strengths Are:

- Knowledgeable Employees
- Caring Employees
- Current Technology

You Commented Most On:

- Collections
- Group Study
- Security
- Noise
- Library Environment

Read the full comments online: LibraryWebsite/surveys/

The LibQUAL+ survey helps library staff understand and improve the perceptions of service quality from a wide survey that includes opinions of library users. This report presents results from a set of pre-made questions, and a section for comments.

This program's survey is a globally tested and trusted survey that maps library staff and user perceptions of service quality in five dimensions:

- Access to Service (including how well the library supports its users)
- Information Access (including how well the library supports its users)
- Library's Role in Interlibrary Loans
- Library's Role in the Quality of Information
- Library's Role in the Quality of Service

Respondents may express and have personalized views on which surveys are important. The resulting surveys may lead to new services, recommendations for improvements, and overall increases in the level of service users require from the library to which the library is meeting their needs.

In addition, the library is open to conducting more surveys on library users, information literacy, and overall satisfaction with the library, as a follow-up.
LIBQUAL RESULTS

- Summary of LibQUAL+ Process - 2016
- LibQUAL 2016 Summary
- Summary of LibQUAL+ Process - 2014
- Summary of LibQUAL+ Process - 2012
- Summary of LibQUAL+ Process - 2008
- Summary of LibQUAL+ Process - 2006
Survey responses indicate that the Library is most important to graduate students, followed by undergraduates and faculty.

The survey was administered to a subset of 100 faculty in those areas.

What is most important to graduate students?

- Public service
- Information access
- Library space

What is most important to undergraduates?

- Public service
- Information access
- Library space

What is most important to faculty?

- Public service
- Information access
- Library space

Graphic 1: Survey responses

- Public service
- Information access
- Library space

Graphic 2: Response rates 2014-2016

- Public service
- Information access
- Library space

Graphic 3: Importance to students

- Public service
- Information access
- Library space

Graphic 4: Importance to faculty

- Public service
- Information access
- Library space

Graphic 5: Importance to graduate students

- Public service
- Information access
- Library space

Graphic 6: Importance to undergraduates

- Public service
- Information access
- Library space

Graphic 7: Importance to faculty

- Public service
- Information access
- Library space

Graphic 8: Importance to graduate students

- Public service
- Information access
- Library space

Graphic 9: Importance to undergraduates

- Public service
- Information access
- Library space
What do librarians assess?

- Spaces
- Collections
- Services
- Learning
- Leadership
- Collaboration

- Impact and value
- Quality
- Perceptions and expectations
- Effectiveness
- Sustainability
Why visualize library assessment data?

- Increase the library’s value to its users
- Evidence-based allocation of funds
- Improve decision making processes
Boston University Libraries
2016 Survey Report

Reading Diverging Stacked Bar Charts

Many of the questions in the survey asked for opinions on a five-point scale, such as “1 Not Important” to “5 Very Important,” or “1 Not Satisfied” to “5 Very Satisfied.”

To display the results from such questions in a readable yet compact manner, this report uses diverging stacked bar charts. Since such charts are somewhat uncommon, this example gives some pointers on how to interpret them.

Overall Satisfaction with Libraries

The survey asked patrons how satisfied they were with the libraries overall.
Boston University Libraries
2016 Survey Report
Faculty Opinion of Library Resources

Faculty were asked the importance of various types of resources to their work, and their satisfaction with the resources available from BU Libraries. “Man./arch.” is “Manuscripts or archives.”
Help #BULibraries improve! Take a survey & enter a drawing for an #ipadmini4. Check email for link #bostonuniversity
The MINES Survey

WHO

The MINES survey asked who is using the libraries' online collection. For comparison, the print circulation is shown for the same period. Because the scales are different for the two charts, and because they are measuring two different things (sessions vs. items), the charts are most useful for comparing the relative proportion of use across the different groups.

WHO IS USING THE ONLINE COLLECTION

This figure shows how many online sessions were initiated to access the library collection by each type of patron during the period covered by the MINES survey, from March 2014 through February 2015. Since much of the variation is due to the different sizes of the groups, the chart on the right shows the average per individual.
The MINES Survey

**WHY**

**WHY THE ONLINE COLLECTION IS BEING USED**

This figure shows the percent of sessions from March 2014 through February 2015 for which the patron gave each reason for accessing the online library collection, first for all sessions and then broken down by major patron groups.

![Diagram showing reasons for accessing online library collection](image-url)
The MINES Survey

**Type of Research by School/College**

The chart on the left shows, for faculty affiliated with a particular school or college, the online sessions devoted to different kinds of research, as a percent of all online sessions by faculty at that school or college. The chart on the right shows the same for graduate students.
The MINES Survey

MONTHLY AND WEEKLY VARIATION IN USE OF THE LIBRARY COLLECTION

The chart on the left shows what percent of yearly online sessions occur in each month from March 2014 through February 2015. The chart on the right shows what percent of online sessions occur in each day of the week, broken down by major patron groups. For comparison, print circulation is also shown in each chart.
The MINES Survey

**USE OF THE LIBRARY’S COLLECTION**

- **WHERE:**
  - Grads 49%
  - Undergrads 25%
  - Faculty 13%
  - Off Campus 58%

- **WHEN:**
  - April and October

- **WUT:**
  - Coursework 52%
  - Research 34%

**Key Recommendations**

- More explicitly consider grad students in collection decisions
- Seek closer integration with curriculum
- Strengthen engagement with research
- Optimize the online experience of patrons

Visit bu.edu/library/MINES for the full report.
Visualization
What is data visualization?

the use of visual encodings to represent information (data) in a way that facilitates exploration, discovery, and analysis
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What is data visualization?

the use of visual encodings to represent information (data) in a way that facilitates exploration, discovery, and analysis
Visualization is

a process or practice of communication, narrative, and representation

an artifact or object of scholarly inquiry, analysis, and investigation
Types of visualizations

- static
- interactive
- print
- web
- infographics
- charts
- maps
Bar Chart

Multi-Series Line Chart
Choropleth

http://bl.ocks.org/mbostock/4060606
Force-Directed Graph

http://bl.ocks.org/mbostock/4062045
MANY EXPERTS PREDICT that the library and information science industry will grow at a slower pace between 2012 and 2022. Slower growth could create a more competitive field where professionals need the highest level of education to secure jobs. The industry will also change as patrons expect more technological services from their local libraries.

LIBRARY AND INFORMATION SCIENCE GRADUATES CAN EXPECT TO EARN DIFFERENT INCOMES DEPENDING ON THEIR POSITIONS.

PAY by POSITION

- Archivist: $72,560
- Computer Systems Analyst: $44,071
- Reference Librarian: $45,614
- Librarian, Special Library: $58,333
- Librarian, Special Library: $58,161
- Database Administrator: $52,384
- Information Systems Manager: $56,370
- Information Security Analyst: $58,170
- Head Librarian: $86,170
- Library Director: $120,960

GENDER ALLOCATION

76% Female

NETWORK AND COMPUTER SYSTEMS ADMINISTRATOR

LIBRARIAN SPECIAL LIBRARY

LIBRARIAN, SPECIAL LIBRARY

LIBRARIAN, SPECIAL LIBRARY

LIBRARIAN, SPECIAL LIBRARY

HEAD LIBRARIAN

INFORMATION SYSTEMS MANAGER

INFORMATION SECURITY ANALYST

76% Female

INDUSTRY OUTLOOK
on Library and Information Science

WHERE GRADUATES LIVE also Affects Pay

- TOP 3 CITIES BY PAY

LIBRARIAN JOBS OF THE FUTURE

ALTHOUGH STATISTICS show that 60% of librarians work in academic settings, we must also recognize that what it being seen to urban environments (60% of the workforce in the public sector) and the public school system where many librarians work.

FUTURE NUMBERS

Liberary science graduates say that lead this emphasis on workforce development as an important aspect of their role.

INFLUENCE OF E-READERS on Library and Information Science

- Many patrons say that e-books are inferior digital format.
- Some claim that e-books are not as enjoyable.
- Others believe that e-books are convenient.

LIBRARIES ARE CHANGING

- Libraries are evolving to meet patrons needs.
- Librarians are becoming more tech-savvy.
- Librarians are embracing new technology.

HOW SMARTPHONES COULD Shape the Library's Future

- Mobile devices such as smartphones could change the way libraries operate.
- Libraries are becoming more connected.
- Libraries are becoming more integrated.

POSITIONS FOR THE FUTURE of Library and Information Science

- Manager of Digital Asset Mangement
- Manager of Data Analysis
- Manager of Data Curation

- Data Curation Manager
- Data Analysis Manager
- Manager of Digital Asset Mangement

- Librarians are expected to be familiar with new technologies.
- Librarians are expected to be able to adapt.
- Librarians are expected to be able to learn new technologies.

USC Library Science,
https://librarysciencedegree.usc.edu/resources/infographics/library-industry-outlook/
<table>
<thead>
<tr>
<th>Common platforms for visualization</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Excel</td>
<td>Python</td>
</tr>
<tr>
<td>Tableau</td>
<td>JavaScript – D3, Leaflet</td>
</tr>
<tr>
<td>R</td>
<td>Adobe Illustrator</td>
</tr>
<tr>
<td>MATLAB</td>
<td>Free web-based tools</td>
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Why do we visualize data?

to communicate information

to point attention

to tell a story
Why do we visualize data?

to communicate information
to point attention
to tell a story
Types of stories told through visualization

changes over time
interesting factoids
surprising connections
personal experiences
revealing comparisons

Rahul Bhargava, “Hands-On Approaches to Data Storytelling”
Each day, Snell Library inhales and exhales with the rhythm of campus. Users engage with our spaces both in person and online, through swipes of their ID cards and clicks on the library’s website.

**HOW TO READ**

This diagram shows patron entries to the library and online user sessions on the library’s website for each hour of every day in the 2015 calendar year. Each individual circle corresponds to a total number of card swipes throughout a given hour of day. Each row of circles along the arc of the diagram represents a single day in a month, and each circle in that row represents a single hour of the day. The relative size of a circle corresponds to the total number of recorded ID card swipes for that time; a larger circle means a relatively greater number of swipes and thus more entries into Snell Library.

Circles are colored to show semesters and breaks, from the beginning of the spring semester 2015 through the end of the following fall semester. Gray circles show relative numbers of user sessions on the library website.

**WHAT TO LOOK FOR**

In each semester and summer session, many people enter the library at all hours of the day. The innermost arc of circles, which corresponds to 12 AM of each day, reveals that many people enter the library this late throughout the semester, increasing especially around midterms and the end of semesters (finals). Breaks in circle density reveal weekends and holidays when students are away.

Early in the morning, when few individuals enter the library’s physical space, many more users are on the library’s website (shown by gray circles). Even when the library’s doors are closing in their own body, the library is still alive in the digital realm, serving users not only on campus but also across the world.

**ABOUT THE DATA**

Each time a patron enters the library, they swipe their ID card as they pass through the gate. Each swipe of the card is recorded as a single entry; if one individual swipes and enters the library 6 times in a given span of time, this is recorded as a total of 6 individual entries.

Website user session data are generated via Google Analytics and record who visits the website, what pages they visit, and for how long.
Cultures of Reception
WOMEN WRITERS IN REVIEW

WHAT IS WOMEN WRITERS IN REVIEW?
Women Writers in Review is a collection of eighteenth- and nineteenth-century reviews, publication notices, literary histories, and other texts responding to works by early women writers. Women Writers in Review is published by the Women Writers Project at Northeastern University and was created as part of the Cultures of Reception project, which was designed to investigate the discourse of reception in connection with the changing transatlantic literary landscape from 1770 to 1830. The Cultures of Reception project was generously funded by a Collaborative Research grant from the National Endowment for the Humanities.

Women Writers in Review collects more than 400 reviews that were encoded in the Text Encoding Initiative (TEI) markup language to record their structures, rhetorical features, and intertextual moves (such as quotation from other texts). The Women Writers in Review interface offers searching by the reviewers’ sources, by the authors and works that they reference, by their genres and formats, and by tracked tags such as the topics they discuss and their evaluations of reviewed texts.

READING THIS VISUALIZATION
In this visualization, each circle represents an author’s received work or a reception document about that work (i.e., a review written about the referenced work). These circles are plotted horizontally against time and grouped vertically alphabetically by author. Black circles indicate the first publication of a work reviewed by others; colored circles indicate receptions of those works. Each color corresponds to different degrees of favorableness in the reception of the referenced work.

- **Very Negative**
- **Somewhat Negative**
- **Mixed**
- **Somewhat Positive**
- **Very Positive**
- **Neutral/No Review**

When several reception documents about a single work appear in the same year, those receptions appear as concentric circles. The result is that it is possible to see how certain works make a big splash; many concentric circles indicate a single work by an author that was reviewed positively or negatively by many others all at once.

Sometimes, several years may pass between a work’s publication and when it is reviewed and referenced in other documents. In these situations, circles (works and reception documents) are connected by gray lines.

Finally, gold rectangles show the lifespan (years of productivity) and dotted red lines indicate the year of death of each displayed author, demonstrating that some reviews are published post-mortem.

SEE AND LEARN MORE
To learn more about Women Writers in Review, visit
http://www.wwr.northeastern.edu/review/

ACKNOWLEDGMENTS
Women Writers in Review (Cultures of Reception) is published by the Northeastern University Women Writers Project with support from the Digital Scholarship Group in the Northeastern University Libraries and grant funding from the National Endowment for the Humanities.

This visualization was created by Steven Brown, Data Analyst and Visualization Specialist in the Digital Scholarship Group, using D3.js and Adobe Illustrator. Steven can be contacted via email at stevenbrown@northeastern.edu.
HOW TO VISUALIZE TWO NUMBERS

Given the data set of 27, 73 or 13, 87, how many different ways can you think of to visualize those data using only markers and sticky notes?

The following are responses to this prompt given in data visualization workshops over the past year — ranging from familiar bar and pie charts to some creative deviations — categorized by the channels and modes through which they communicate these quantities.

This visualization was created by Steven Braun using D3.js and Adobe Illustrator. Steven is the Data Analytics and Visualization Specialist in Snell Library. For more information about data visualization services offered at Snell, see subjectguides.lib.neu.edu/gis-datavis or contact Steven at s.braun@northeastern.edu.

ABSTRACT

CHART TYPES

- Area chart
- Bar chart
- Bell curve or box plot
- Histogram
- Line chart
- Number line
- Pictorial
- Pie chart
- Scatter plot
- Stacked columns
- Tally marks
- Text
- Venn diagram

HOW TO READ THIS VISUALIZATION

Each row represents a single visualization (created on a single sticky note) of the data set [13, 87] or [27, 73]. Colors represent different modes or channels of communicating the values of those data, e.g., size, proportion, or color. For each visualization, the channels or modes used by it are marked with a colored square; gray squares indicate that a particular channel is not used by the respective visualization. Each row is colored according to visualization or chart type, as indicated to the left.

LEARN MORE

Most of these “abstract” visualizations did not fall into any other traditional categories of charts and graphs but relied heavily on the use of proportion and color to communicate the data set. All of these bar charts relied on size (length) as the primary channel of representation, but some went a step further and used additional channels like color and texture to communicate differences within the data set. Line charts are effective because they rely on position as the primary channel of communicating value, which enables highly accurate reading in one and two dimensions. Pie charts are among the most popular charts people typically think of when it comes to visualization, especially for data sets where the values add up to a unified whole (e.g., 100). Tally marks are among the simplest ways to visually communicate a data set, directly encoding quantity in a way that is countable in one-to-one correspondence. Although far less abstract than other forms of visualization, simply writing out numbers is another way of visually communicating data; here, text is combined with other channels such as size to illustrate numeric differences.
Visualization is an analytical tool

for exploratory analysis
for ensuring methodological rigor
for distilling narrative from data
for building connections
Tufte’s guidelines on graphical integrity

above all else, show the data

Assessment and visualization are both forms of storytelling we often need to communicate evidence-based findings about our users – how they use library resources and what support they need.
Common assessment questions

gate counts
circulation counts
geographic borrowing trends
reference and instruction statistics
Who Do We Borrow From?
Types of stories told through visualization

changes over time
interesting factoids
surprising connections
personal experiences
revealing comparisons

Rahul Bhargava, “Hands-On Approaches to Data Storytelling”
Resources for learning more

NU, GIS and Data Visualization Subject Guide
http://subjectguides.lib.neu.edu/gis-datavis

Handout: Free Web-Based Visualization Tools
http://hdl.handle.net/2047/D20257483

BLC workshops / Lynda.com tutorials
THANK YOU

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