Library Analytics: Shaping the Future — The Future of Libraries is Analytics

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Among all the areas of intense research and excitement in libraries right now, library data analytics ranks at or near the top. Research into collections usage, space utilization, information literacy, research indicators, and all manner of return on investment (ROI) measures are being collected and analyzed so librarians and their libraries can quantify their value and contribution to the institution's mission — usually in the form of student learning outcomes or faculty research productivity. Data and analytics are such hot topics that the word "data" ranked fifth in a word cloud of the **2016 Charleston Conference** program, just behind Library, Libraries, Charleston, and Collection(s). "Usage," "analysis," and "assessment" also ranked in the top 50 words for the conference. So not only is the future of libraries, analytics, but it is also the present as well!

It no longer goes without question that libraries are a positive benefit to the university or institution. In general, yes, most reasonable academics and administrators know implicitly that the library and all of its systems, services, and collections contribute positively to the research and teaching of the institution. But in an era of big data and analytics across all industries and across all units of the university, quantifying exactly what that contribution is to the university's success and what exactly a library does that can be enhanced with further resources is a question that we are much closer to answering. The future health of libraries will be determined by analytical assessment in myriad ways — libraries that are able to tell their own stories within the context of the institution will be able to explain how they are contributing to the mission, how resources are being prudently managed, and will be able to advocate for increased resources. Analytics can show how well libraries are doing and what they can do better, or even what they are not doing well and how they can improve. As **Oakleaf**, **Walter**, and **Brown** pointed out in their recent article *The Academic Library and the Promise of NGDLE*, "This burgeoning research stream is building a picture of the role that student engagement in library services and resources plays in helping students learn, persist, and graduate."[1]

While funding and resource allocation remains a primary motivating force for many librarians, being able to indicate how a variety of collaborations or interactions (between students and faculty and the library) provide benefits to the research and learning enterprise is extremely important. The pace of change for libraries has accelerated the price paid by libraries who can't tell their stories with evidence. The stakes have never been higher. And that's what led us to propose an ongoing column for *Against the Grain* centered on Data & Analytics.

Multiple library assessment conferences are held in both the United States and worldwide regularly and many other regional library meetings have a partial or total focus on a variety of assessment topics, including content usage, services and performance metrics, and learning outcomes. Major projects focusing on assessment and analytics have happened

in recent years or are near completion. To highlight a few from around the globe, there was the Library Impact Data Project from the **University of Huddersfield** in the United Kingdom, the Library Cube project from the **University of Wollongong**, the **University of Minnesota's** Library Data and Student Success project, and the **ACRL** Academic Library Impact on Student Learning and Success project and reports. The Library Impact Data Project sought to examine the correlation between library usage and degree attainment among institutions in the United Kingdom and found that "the project has successfully demonstrated that there is a statistically significant relationship between student attainment and two of the indicators — e-resources use and book borrowing statistics — and that this relationship has been shown to be true across all eight partners in the project that provided data for these indicators."[2] The Library Cube Project was an initiative by the **University of Wollongong** in Australia to build a database with collecting and reporting functionality to analysis library usage and student performance. Authors **Cox** and **Jantti** found that "There is a

strong relationship between the average marks for each level of resource usage and student marks, and (with a few notable exceptions), this relationship holds for many views of the data."[3] The Library Data and Student Success project at the **University of Minnesota**, has found quantitative evidence that library service and collections usage contribute positively to student degree complete, student retention, and first year student success.[4] **ACRL's** newest report, Academic Library Impact on Student Learning and Success, highlights over 50 studies during the 3rd and 4th project years of their Assessment in Action program, and concludes that *students benefit from library instruction in their initial coursework, library use increases student success, collaborative academic programs and services involving the library enhance student learning, information literacy instruction strengthens general education outcomes, and library research consultations boost student learning.*[5]

One key theme running through all these projects (and additional individual research projects at various libraries) is the fact that librarians have more granular ways to collect data now, some tools to analyze it, and more analytical skills to understand it. Formerly, processes to count usage were frequently manual and even when information systems like traditional library OPACs and then ILS systems were involved, those systems had less than optimal processes for querying, displaying and extracting data and fewer good processes for analysis and display of data. Even today, the current state of library information systems continues to perpetuate a siloed, fragmented, and scattered approach to reporting data. At a recent meeting one author attended, a group of twenty librarians unanimously confirmed that their current workflows always include extracting data to Microsoft Excel to manage, manipulate, and graph data. Even when librarians have access to and the skills to leverage advanced tools like Tableau, they still must extract data from disparate library systems, sometimes even logged manually, in order to import it into these advanced tools.

Our goal for this column is to introduce a new data-centered analytics topic in each issue and highlight current research on the topic. The following general themes will be explored in forthcoming columns — collections usage and business models, open access and open educational resources usage, eBook usage and anal-

ysis, article level metrics and altmetrics, standards development, and tools and visualization techniques. We believe analytics will have a tremendous impact on the future of libraries and we believe the data is there to support the impact libraries can have on student outcomes and faculty research. By highlighting current issues and focusing on the role analytics can play in resolving and innovating around these issues, we believe libraries are well-positioned to posit solutions to the challenges we face and create a future that is data-driven and expands the role of libraries and librarians.

Endnotes

1. **Oakleaf, Megan**, **Scott Walter**, **Malcolm Brown** (2017). "The Academic Library and the Promise of NGDLE," Educause Review, Published online at: *http://er.educause.edu/articles/2017/8/the-academic-library-and-the-promise-of-ngdle*. Accessed August 14, 2017.

2. **Stone Graham** and **Ramsden, Bryony** (2013). "Library Impact Data Project: looking for the link between library usage and student attainment." College and Research Libraries, 74 (6). pp. 546-559. Published online at: *http://eprints.hud.ac.uk/id/eprint/15038/5/546.full.pdf*. Viewed August 17, 2017.

3. **Cox, Brian** and **Margie Jantti**. (2012). "Discovering the Impact of Library Use and Student Success." Educause Review. Available: *http://er.educause.edu/articles/2012/7/discovering-the-impact-of-library-use-and-student-performance*. Accessed August 17, 2017.

4. **Soria, Krista**, **Shane Nakerud**, **Jan Fransen**, et. Al. All papers available: *http://librarydatastudentsuccess.blogspot.com/p/presentations-and-papers.html*. Accessed August 17, 2015.

5. **Association of College and Research Libraries**. "Academic Library Impact on Student Learning and Success: Findings from Assessment in Action Team Projects." Prepared by **Karen Brown** with contributions by **Kara J. Malenfant**. Chicago: Association of College and Research Libraries, 2017. Published online at *www.acrl.ala.org/value*. Accessed August 17, 2015.