Key Takeaways

- **Academic libraries** support institutional goals for **student success** and have embraced the use of **correlation research** to demonstrate connections between library services and resources and student learning, retention, completion, and postgraduation success.

- **Recent correlation research** has revealed promising connections between academic libraries and student success; however, **data difficulties seem likely to stymie** continued work in this area.

- To further their research and maximize library contributions to learning, librarians should prepare for next generation digital learning environments and learning analytics initiatives on their campuses by reading about related topics, engaging with library colleagues, and consulting campus partners.
The academic library exists to support the goals of its institution; primary among those goals are student learning and success. Consequently, librarians endeavor to provide services, resources, and expertise to ensure that students achieve learning outcomes, persist to completion, and launch successfully after graduation.

The connections between academic libraries and student learning and success have long been pursued and are often assumed, but the past several years have also seen an explosion of research seeking to demonstrate, assess, and communicate the value of student-library interactions. This proliferation of research has discovered a number of correlational impacts, but it has also brought to light a number of obstacles standing in the way of maximizing potential library contributions to student learning and success.

**Linking Libraries with Learning and Success**

Spurred by the 2010 publication of ACRL's *Value of Academic Libraries* report, librarians have recognized that the national higher education dialogue, the missions of most higher education institutions, and the expectations of most higher education stakeholders — students, parents, faculty, administrators, citizens, and government officials — focus on student learning and success.¹ Librarians have also acknowledged that existing assessments of library value (input/output, satisfaction, service quality, and use measures) fall short of connecting libraries with student learning and success. As a result, librarians have embraced the use of correlation research to connect library contributions in the form of services and resources with the needs, goals, and outcomes of their institutions (figure 1).
In an effort to investigate the links between libraries and institutional goals, much of this research has explored questions following a similar formula (figure 2). Essentially, librarians pair (1) a library service, resource engagement, or use data with (2) data that serves as a surrogate for student learning or success, like records of GPA, retention, or graduation.

Figure 1. Connecting library contributions with the institution

Source: Megan Oakleaf

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. At the same time, a pattern of research difficulty, stemming primarily from the data available to conduct this research, has also emerged.

**Data Difficulties**

When librarians investigate the impact of library services and resources on student learning and success, they rely on library data and institutional data to tell the story. However, both pools of data can have problems. Sometimes the data is too "chunky" when a finer level of granularity is needed; one example is using GPA data as a surrogate for learning outcomes. Or, too little data is available because it has not been recorded or maintained. In other situations, necessary data is inaccessible as a result of information silos. The data might be owned by the institution but not shared with the library (or vice versa), buried in vendor-owned data systems, or stored in formats that are not easily translatable, preventing the research from being conducted at all.

The silo issue presents a major challenge to taking the current body of research correlating libraries with student learning and success to the logical next step. These "next steps" could include:

---

**Figure 2. Formula for library research questions**

- academic library service, expertise, or resource
- relationship verb
  - (impact, contribute to, affect, influence, relate to, cause, determine, help, correlate with, etc.)
- desired outcome
  - [student success]
  - [student learning]
  - [etc.]
1. Connecting library interaction data with both detailed learning surrogates that live in learning management systems and student engagement information that lives in learner relationship management systems, student advising systems, and co-curricular/extracurricular involvement systems

2. Developing longitudinal studies that follow the progress of individual students over periods of time

3. Preparing for the next generation digital learning environment (NGDLE) — and with it the learning analytics efforts — now proliferating throughout higher education institutions nationwide

The Next Generation Digital Learning Environment

As higher education institutions move toward the NGDLE, libraries must consider their role in an evolving educational ecosystem. First described in 2015, the NGDLE posits that the future of the digital learning environment will be marked by a shift from an over-dependence on the learning management system (LMS) to a new vision of learning environment architecture, one made up of a variety of pedagogical tools and applications all connected by means of open standards. One of the most visible and tangible ways the NGDLE will manifest is in the domain of learning data and learning analytics. Through the use of interoperability standards, all applications associated with an institution's teaching and learning mission can contribute learning data to a central repository. By analyzing this aggregated data, institutions can apply more powerful analysis techniques that will result in more useful information about learner success. While institutions move to consolidate learning data and explore the use of interoperability standards to realize the benefits of a new digital learning environment, academic libraries typically do not contribute learning data to NGDLE efforts and learning analytics initiatives. This omission of library data from the institutional data enterprise marginalizes both the institutional role and value of libraries in supporting student learning and success.

Embracing Interoperability Standards

To prepare for future higher education realities, expand research to demonstrate and increase academic library contributions to student success, and prepare to engage in the NGDLE and institutional learning analytics initiatives,
libraries should consider adopting interoperability standards that will enable "the collection, storage, and transport of data about learning" across institutional and library data systems. A growing number of learning technologies have adopted interoperability standards, such as Caliper, a standard that "provides data structure and semantic interoperability, resulting in an improved exchange of information across applications and institutions [...] which could change the experience for students, faculty, and [other higher education professionals] by enabling more-sophisticated analytics, learning dashboards, and advising tools." 5 Indeed, an IMLS-funded grant project titled Libraries Integration in Institutional Learning Analytics (LIILA) kicks off this month to:

1. Increase librarian awareness of and engagement in learning analytics
2. Craft a plan for integrating academic libraries into learning analytics initiatives that support student learning and success
3. Develop sustaining learning analytics partnerships and collaborations among academic librarians, educational technology lynchpins, institutional and library IT professionals, and library vendor communities
4. Explore, design, and develop library use cases and data profiles based on learning analytics practices and interoperability standards that can be used to integrate library data with institutional data stores

While efforts like the LIILA project seek to create vision and technology strategies to overcome existing data problems, select academic libraries nationwide have initiated efforts to align and integrate with institutional learning analytics and integrated planning and assessment systems (IPAS). The DePaul University Library is one such pioneer.

At DePaul, an emergent institutional learning analytics program provided new opportunities for the library to review its library assessment program, maintain its role as a core provider of services to students, and provide leadership for the development of learner support services as part of an IPAS system. 6 DePaul's IPAS system, "BlueStar [Footer]," was implemented as part of the Foundations for Success initiative [Footer], which the university pursued as a key component of its decennial accreditation review by the Higher Learning Commission of the North Central Association of Schools and Colleges. The goal of this initiative was to "focus the entire university community on student learning and success," and BlueStar contributed to this goal by improving communication among faculty,
academic advisers, and student support offices, and by complementing the simultaneous development of a student success web portal that provides students with one-stop access to academic information and learner support services at the university.

The DePaul University Library, already a partner in the student success portal through its development of the Learning Commons, also partnered in developing the dashboard of services available to faculty and students through BlueStar. In late 2016, library research services were added to the BlueStar system, and faculty and advisers can refer students to a librarian for research assistance when needed. At the same time, the library was added to the Division of Student Affairs' online campus engagement network, OrgSync. With representation in both learning analytics (academic affairs) and engagement analytics (student affairs), the DePaul University Library is effectively integrated into online systems, holding a unique place at the crossroads of curricular and co-curricular learning at DePaul University.

Librarians at DePaul also believe the academic library has the potential to hold a singular place in the NGDLE, as both a provider of expertise and services to faculty, staff, and students, designing, teaching, and learning within the complex, digital ecosystem that makes up the NGDLE, and as a physical space in which faculty, staff, and students working in that environment can come together to master the tools, techniques, and technologies that are central to the future of higher education. DePaul University, like other institutions, is taking steps today to ensure that faculty, instructional designers, technology specialists, and librarians will be able to work together in physical and digital library spaces designed to promote physical community as well as digital engagement in the NGDLE.7

Getting Started

Librarians seeking to prepare for the NGDLE and learning analytics initiatives at their own institutions can take a number of steps. First, librarians can get a grounding on these topics by reading materials like:

Second, they can engage with library colleagues on topics including the role of the library in an institutional NGDLE and learning analytics, promote the need to follow or establish policies to protect student data, and identify data housed in the library that can be used institutionally to support student learning and success.

Finally, librarians can connect with partners including information technology, institutional research, student affairs, and teaching and learning professionals to learn about the readiness or progress of their campus in these areas.

Following these steps will help ensure a role for academic libraries in the NGDLE, enhance institutional learning analytics initiatives through the inclusion of library learning data, bolster research seeking to identify and develop library contributions to institutional missions, and — most importantly — accelerate the library's ability to support, sustain, and stimulate student learning and success.

Notes


Megan Oakleaf is an associate professor in the iSchool at Syracuse University.

Scott Walter is university librarian at DePaul University.

Malcolm Brown is director of the EDUCAUSE Learning Initiative.

© 2017 Megan Oakleaf, Scott Walter, and Malcolm Brown. The text of this article is licensed under Creative Commons BY-NC-ND 4.0.

Faculty - Library Collaboration, Instructional Design, Instructional Technologies, Learning Analytics, Learning Environments, Learning Management Systems (LMS), Libraries and Technology, Student Engagement and Interaction, Student Learning Support, Student Success, Support for Teaching and Learning, Outcomes Assessment, Next Generation Digital Learning Environment (NGDLE)