

DOCUMENTED LIBRARY CONTRIBUTIONS TO STUDENT LEARNING AND SUCCESS:

Building Evidence with Team-Based Assessment in Action Campus Projects

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Executive Summary

Academic librarians from across North America continued to expand assessment practices through their participation in the Association of College and Research Libraries' (ACRL) three-year program, Assessment in Action: Academic Libraries and Student Success (AiA).¹ Launched in 2013 by ACRL, in partnership with the Association of Institutional Research and the Association of Public Land-grant Universities, and with funding from the U.S. Institute of Museum and Library Services, AiA is helping over 200 postsecondary institutions of all types investigate the library's impact on student learning and academic success. By promoting library leadership in campus-wide assessment projects, libraries are demonstrating contributions to issues of institutional significance.

Although each campus team carries out an assessment project that is unique to the institution's academic mission and priorities, the findings about different ways that libraries are contributing to students' learning benefit the higher education community as a whole by expanding the body of evidence-based assessment results related to students' academic experiences. In addition, the numerous approaches, methods, and tools that the campus teams use to assess library impact can be replicated in or adapted to a variety of different institutional settings and customized to align with specific campus academic priorities.

Compelling Evidence for Library Contributions to Student Learning and Success

The AiA project findings add support to a growing body of evidence that demonstrates positive contributions of academic libraries to student learning and success in four key areas. The findings about library impact in each of the four areas described below, which come from assessment projects conducted at different types of institutions, are particularly strong because they consistently point to the library as a positive influencing factor on students' academic success.

1. Students benefit from library instruction in their initial coursework.

Information literacy instruction provided to students during their initial coursework helps them acquire a common set of competencies for their undergraduate studies. The assessment findings from numerous AiA projects that focused on information literacy initiatives for freshmen and new students underscore that students receiving this instruction perform better in their courses than students who do not.

2. Library use increases student success.

Several AiA studies point to increased academic success when students use the library. The analysis of multiple data points (e.g., circulation, library instruction session attendance, online databases access, study room use, interlibrary loan) shows that students who use the library in some way achieve higher levels of academic success (e.g., GPA, course grades, retention) than students who did not use the library.

¹ This executive summary is available online as a separate document, formatted to share broadly with campus stakeholders. See www.ala.org/acrl/files/issues/value/y2_summary.pdf.

3. ***Collaborative academic programs and services involving the library enhance student learning.***

Academic library partnerships with other campus units, such as the writing center, academic enrichment, and speech lab, yield positive benefits for students (e.g., higher grades, academic confidence, retention).

4. ***Information literacy instruction strengthens general education outcomes.***

Several AiA projects document that libraries improve their institution's general education outcomes and demonstrate that information literacy contributes to inquiry-based and problem-solving learning, including critical thinking, ethical reasoning, global understanding, and civic engagement.

Building Evidence for Library Contributions to Students' Academic Success

Additional areas of library impact are also being investigated by AiA campus teams. While these impact areas may not have been studied as extensively as the four areas described in the previous section or the project findings may not be as consistently strong, the assessment results do build evidence for positive connections between the library's services and resources and student learning and success as noted below:

- Student retention improves with library instructional services.
- Library research consultation services boost student learning.
- Library instruction adds value to a student's long-term academic experience.
- The library promotes academic rapport and student engagement.
- Use of library space relates positively to student learning and success.

Findings about Higher Education Assessment

A team-based approach to assessment on each campus is an essential element of the AiA program design. The project reports frequently mention the value of collaboration as the campus teams investigated connections between the library and student learning. Four benefits of collaborative assessment in particular have emerged:

- The collaborative work among the team members promotes a shared understanding of an institution's academic priorities and the contributions of various campus stakeholders to these priorities.
- Collaboration leads to important discussions about student learning and academic success, which result in a clearer articulation and increased agreement about the definition, description, and measurement of student learning and success attributes.
- By leading a campus team through an assessment project, the AiA librarians build collaborative and results-oriented leadership competencies that contribute directly to improving student learning and success at the institution.
- As campus team leaders, the AiA librarians advance the mission of the library in alignment with institutional priorities.

Introduction

Academic librarians from across North America continued to expand assessment practices in the second year of the Association of College and Research Libraries' (ACRL) three-year Assessment in Action: Academic Libraries and Student Success (AiA) program. Campus teams led by librarians reported to the ACRL community, at academic conferences, and in professional and scholarly journals about their investigations of library contributions to aspects of student learning and success.² These assessment projects build on the findings of the 74 campus teams that completed the first year of the program.³

The AiA program was launched in 2013 by ACRL, in partnership with the Association of Institutional Research and the Association of Public Land-grant Universities, and with funding from the U.S. Institute of Museum and Library Services. Three primary goals frame the project's activities:

1. Develop academic librarians' professional competencies needed to document and communicate the value of the academic library in relation to an institution's goals for student learning and success.
2. Strengthen collaborative relationships with higher education stakeholders, including campus faculty, academic administrators, and assessment officers.
3. Contribute to higher education assessment by creating approaches, strategies, and practices that document the contribution of academic libraries.

The AiA program is helping over 200 postsecondary institutions of all types create partnerships at their institution to promote library leadership and engagement in campus-wide assessment. Each participating institution establishes a team with a lead librarian and at least two people from other campus units. Team members frequently include teaching faculty and administrators from such departments as the assessment office, institutional research, the writing center, academic technology, and student affairs. Over a 14-month period, the librarians lead their campus teams in the development and implementation of a project that aims to contribute to assessment activities at their institution.

The librarian team leaders are supported throughout the project by a peer-to-peer, blended learning community that combines in-person workshops and online professional development activities that emphasize skill building through collaborative problem solving and bridging theory to practice. This participatory and engaged learning approach promotes the action

² Individual teams' descriptive project reports are available at <https://apply.ala.org/aia/public>. Additionally, a comprehensive bibliography at http://www.acrl.ala.org/value/?page_id=980 lists dozens of journal articles, conference presentations, and other public reports. It aims to capture all scholarly and practice-based literature and presentations about AiA and campus projects conducted as part of the AiA program by campus team members, facilitators, and ACRL staff.

³ Read more about the first-year participating institutions in the January 2015 report synthesizing results, "Academic Library Contributions to Student Success: Documented Practices from the Field," available at http://www.ala.org/acrl/files/issues/value/contributions_report.pdf

research focus of AiA. As each campus team identifies important questions related to institutional priorities and addresses them through a collaborative assessment process, the findings promote meaningful action around student learning and inform future library practice. Through these projects, the AiA librarians take a leadership role that has resulted in increasing the visibility of the library and its contributions to academic initiatives on the campuses.

Overall, [the project] contributes to the increasingly high-profile role the library is playing in college-wide assessment efforts, with administrators now consistently appointing librarians to key assessment committees and assessment-focused search committees.

—AiA librarian, reflective report

This report focuses on the assessment projects conducted by those teams that participated in the second year of the program, from April 2014 to June 2015, and presented poster sessions at the 2015 American Library Association Annual Conference in San Francisco, California, June 26 and June 27. In addition, each team leader completed a final project descriptive report, which includes abstracts and images of the posters. These reports are fully searchable in an [online collection](#). Each team leader was also asked to complete a reflective report and, while these second reports are kept confidential, aggregate and anonymous comments from the reflective reports have contributed to this synthesis. This publication is also informed by results from two focus groups undertaken in June 2015 with a total of 21 AiA second-year team leaders. The projects described in this report highlight only a few of the projects; the full reports of 64 projects are posted in the searchable database.

Institutional Teams Represent a Variety of Higher Education Settings

The 64 higher education institutions that completed and reported on their participation in the second year of the AiA program included a variety of types of colleges and universities and came from 34 states in the United States as well as from Canada (see table 1 and figure 1).

Table 1. Types of Institutions for AiA Teams

Institution Type	Year 1	Year 2	Total
Associate's Colleges	10	11	21
Baccalaureate Colleges	7	15	22
Master's Colleges and Universities	31	10	41
Doctoral/Research Universities	6	3	9
Research Universities	18	22	40
Tribal University	1	0	1
Special Focus Institutions	1	3	4



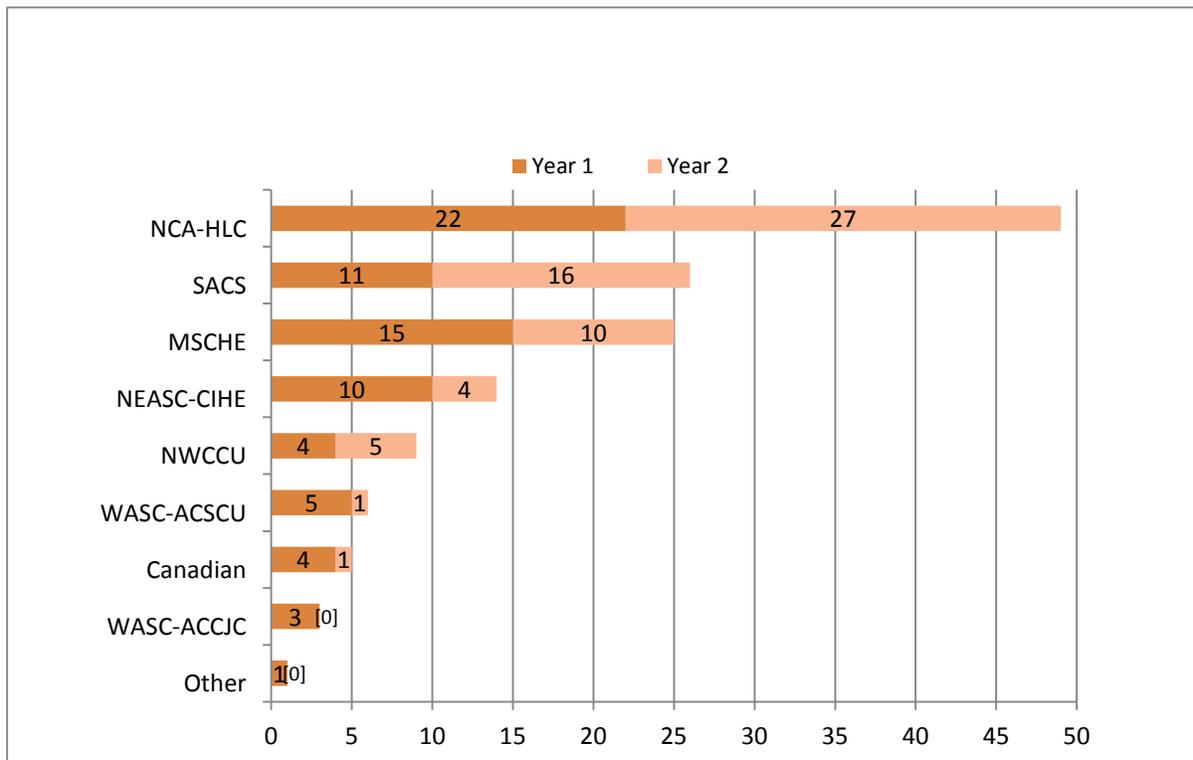
Figure 1. Map of Institutions Selected to Participate in the Second Year of AiA.

The work of the campus teams is contributing to their institution’s ongoing assessment activities, and the lead librarians have noted that their findings are often spotlighted in accreditation reports. The institutions are represented by a variety of different accrediting bodies, including seven U.S. regional and one Canadian (see table 2).

Reviewers’ comments spoken during recent site-visits by . . . accreditation agencies, made it evident to my community of scholars and administrators that our library services and learning outcomes of our information literacy instruction associated with the Assessment in Action project were innovative and aligned with best practices in higher education.

—AiA librarian, reflective report

Table 2. The Accreditation Agencies of AiA Institutions



Connections between Library Factors and Academic Outcomes Investigated

The campus teams considered different library factors (e.g., collections, space, instruction, reference, etc.) and their possible connection to aspects of student learning and success (e.g., course or program learning outcomes, student confidence, retention, persistence) in relation to the institution’s mission and academic priorities. Each team formulated an inquiry question that provided a framework for its assessment project by positing a relationship between the library and student learning or success. The questions also indicated the type of data needed to measure the library factors and academic outcome attributes and the method(s) most appropriate for collecting the data. Connections between 14 different academic outcomes and 14 distinct library factors have been assessed during the two years of the program (see tables 3 and 4).

Table 3. The Number of AiA Projects that Assessed Academic Outcome

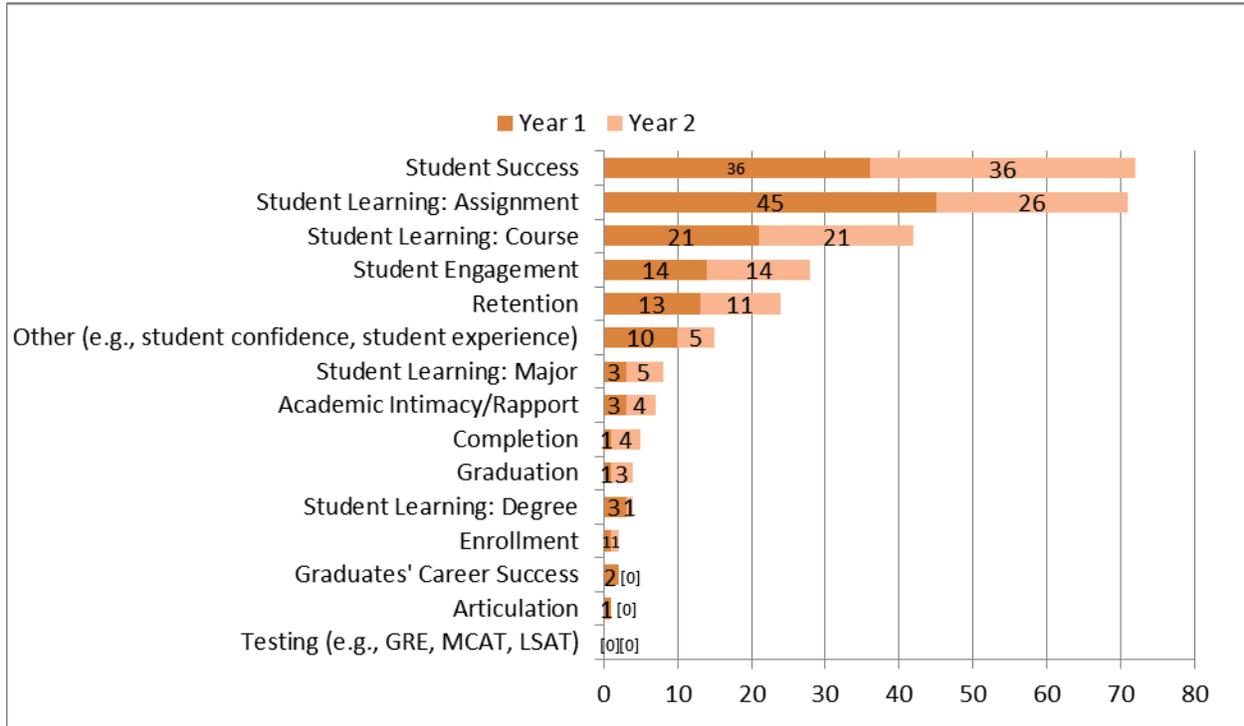
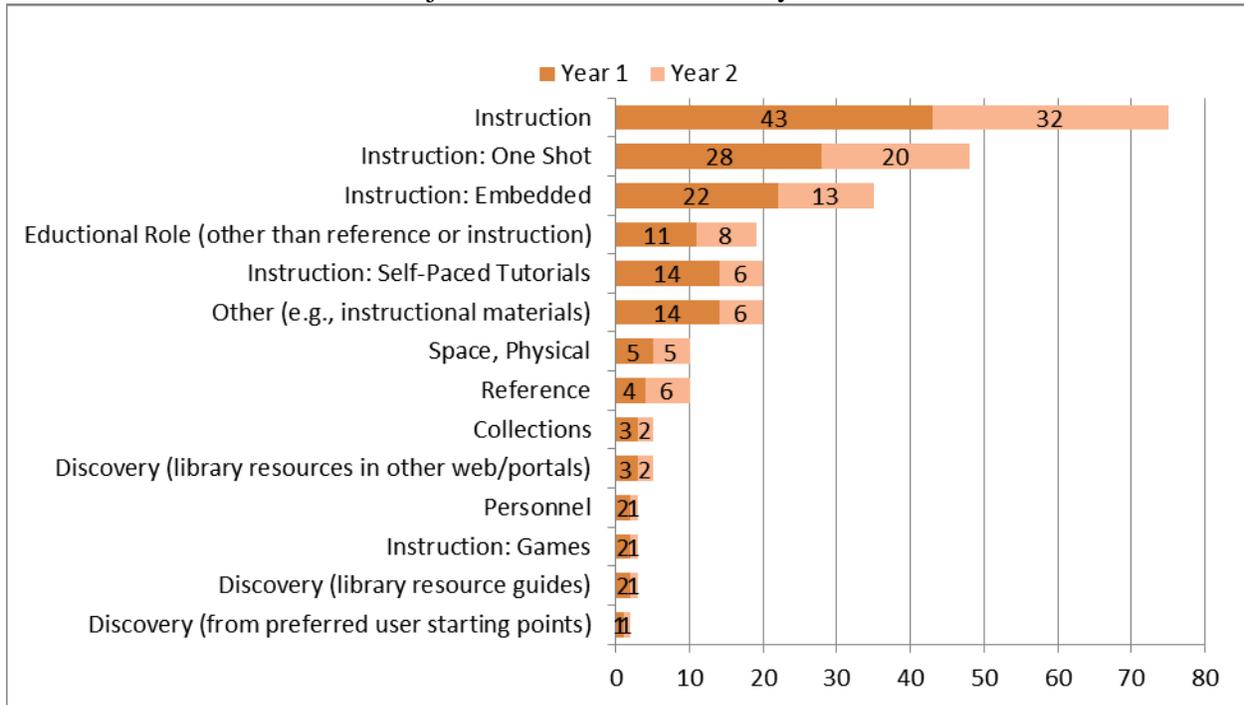


Table 4. The Number of AiA Projects that Assessed a Library Factor



The following ten sample inquiry questions from the second year of the program reflect the variety of student learning and success factors investigated.

- Will an evidence-based medicine instruction session improve students' accuracy and source quality in answering clinical questions? ([A.T. Still University](#))
- How does information literacy contribute to critical thinking in undergraduate students? ([Arkansas Tech University](#))
- What understanding do students have of the concepts of “web” and “database”? ([Des Moines Area Community College](#))
- What is the influence of instructional collaboration between global learning faculty and library faculty on students' information literacy? ([Florida International University](#))
- Does one-shot information competency library instruction in courses prior to English 103, a freshman/sophomore-level research and writing course, contribute to students' success in English 103? ([Pierce College at Fort Steilacoom](#))
- Does student use of library resources, spaces, and services correlate with greater self-efficacy in student-defined measures of success? ([Wake Forest University](#))
- What impact does the number of library instruction sessions and access to a course LibGuide have on the quality of sources students enrolled in developmental reading use for a course project? ([Joliet Junior College](#))
- Does a residually embedded peer reference service positively impact students' academic success and retention? ([Michigan State University](#))
- How do the library's facility and physical spaces impact the student success of undergraduate transfer students and STEM majors? ([University of North Carolina Wilmington](#))
- Is there a relationship between the use of personalized library services by at-risk students and academic success? ([Fulton-Montgomery Community College](#))

An Expanded Array of Replicable Assessment Approaches for Demonstrating Contributions

The increasing variety of methods and tools that the AiA teams have used to assess library impact are expanding and creating new approaches and practices that academic librarians can share and incorporate into their campus assessment initiatives. Many of the assessment approaches can be replicated or adapted for use in a variety of different institutional settings and customized to align with specific campus academic priorities.⁴

⁴ For more on assessment techniques, see the recently released casebook showcasing 27 reflections by first-year AiA team leaders on the inquiry methods they used in their assessment projects, *Putting Assessment into Action: Selected Projects from the First Cohort of the Assessment in Action Grant*, ed. Eric Ackermann (Chicago: Association of College and Research Libraries, 2016).

My biggest insight from this project was the realization that it is possible to measure the impact of attitudes and confidence in a meaningful way in relation to library instruction. This insight, I believe, will be the beginning of a new way to approach assessment that I will apply in future projects.

—AiA librarian, reflective report

The approaches are developed to guide the collection of the data needed to answer the inquiry question formulated by the campus team. Surveys, rubrics, and pre- and posttests were the most common methods employed by teams in Year 2, which parallels the types of assessment methods most frequently used by AiA teams in the previous year. Fifty percent of the campus teams in Year 2 combined two or more assessment methods for their studies. This mixed-methods approach typically brought together quantitative and qualitative data for analysis, leading to a robust, contextualized assessment of the factors being investigated. The two projects described below highlight this approach.

- At [Montclair State University](#), the assessment project focused on government documents and data information literacy in the e-sciences, specifically as it relates to the university's new master's in public health program. A multimodal assessment process was implemented that included pre- and posttest measurements of one-session information literacy class outcomes, use of embedded online research guides, student reports of the influence on their learning of one-on-one research appointments with librarians, and faculty perceptions of the library's impact on students' success in two public health courses. The team found that these multiple assessment methods captured both quantitative and qualitative measures of student learning and also took into account the different learning styles of students.
- The [Utah State University](#) campus team investigated the relationship between course grades and library instruction provided to psychology students at strategic points during their degree-specific coursework. Although the team began with one assessment method, an analysis of grade transcripts, it soon incorporated two additional tools to supplement the initial data and inform future directions: (1) student surveys of confidence with research skills and proficiency, and (2) a faculty focus group to determine skills that instructors want their students to have to be successful. The team found correlations between library instruction and higher grades. The lead librarian noted the benefits of collecting quantitative and qualitative data, "While some of the correlations are slight, we believe the feedback we received from students and faculty in the qualitative portion will increase those connections."

The following table presents a summary of assessment methods and tools used in Year 1 and Year 2 projects.

Table 5. Summary of Assessment Methods and Tools

Assessment Methods and Tools	Year 1	Year 2	Total ⁵
Survey	41	31	72
Rubric	40	26	66
Pre- and Posttest	24	23	47
Other (e.g., correlational analysis, content analysis)	20	15	35
Observation	11	9	20
Interviews	13	7	20
Focus Group(s)	10	6	16

Mining Data with Embedded Technology Applications

Some assessment tools and methods introduced AiA campus teams to new approaches for documenting connections between the library and the academic success of students. The use of technology applications embedded in library systems and e-learning platforms, for example, provided a means for the campus teams to mine library data and assess academic outcomes. The three projects described below focused on this approach.

- To assess the contribution of the library’s Ask-a-Librarian service to student retention, the campus team at [Colorado Mesa University](#) used LibAnalytics data and SPSS to determine connections with student reenrollment or graduation. The assessment project also collected qualitative feedback from students using a LibAnalytics form and with a follow-up survey administered to a subset of students.

In the past, the library had only “we think” and “we feel” anecdotal student success contributions—we could be qualitative about ourselves, reflectively, but had little data to support these statements. Now we have some and will continue growing that pool of data from our various services, so that we can analyze and contribute further to assessment activities.

—Colorado Mesa University

- Since 2007, the [CUNY Borough of Manhattan Community College](#) has provided 24/7 chat reference using OCLC’s QuestionPoint service. To understand better how the service was being used, the campus team analyzed the chat reference transcripts generated during 2013, which document approximately 810 transactions. By using both quantitative and qualitative measures, the library learned that the service’s users are persistent (i.e., logging in more than once), but English fluency issues and technology barriers are challenges to the service’s effectiveness for some students. These findings have prompted expanded discussion about library best practices and ways to address issues that may detract from the academic success of community college students.

⁵ The totals on the table columns do not add up to 74, 64, or 138 (i.e., the number of AiA teams reporting on Year 1, Year 2 and Years 1–2, respectively) because many teams used more than one assessment method and/or type of measure.

- The [City University of Seattle's](#) project investigated how librarian-created modules and library-hosted discussion forums embedded in the university's learning management system, Blackboard, are used by students. The primary goal was to develop processes and methods for assessing the library's instruction program and to collect baseline data. The institution's information technology director created a report that showed, in real time, the number of times students clicked in librarians' modules and forums. This data set was correlated with students' scores on the university's information literacy rubric. With this baseline data, the library staff has been able to identify potential gaps in its provision of instruction to the university's students and plans to initiate conversations with faculty about ways to ensure adequate and equal levels of library support across the university.

Using the Framework for Information Literacy for Assessment

During the second year of the AiA program, the draft *Framework for Information Literacy for Higher Education* (developed by ACRL) was introduced, discussed within the academic library profession, revised, and eventually accepted by the ACRL Board of Directors. Draft versions of the *Framework* were used by two campus teams to assess and redesign their library instruction.

- The [Florida International University](#) campus team focused on a university priority, Global Learning for Global Citizenship. Through this university initiative, the library reaches every student, which provided an opportunity to study instructional collaboration between discipline faculty and library faculty. The team began by creating a global learning information framework of 40 indicators based on the *Framework for Information Literacy* (June 17, 2014, draft version) and then aligned it with the Association of American Colleges & Universities Information Literacy VALUE Rubric. Although 100% of the discipline faculty and librarians who participated in the assessment agreed that "information literacy is an important student competency" and 93% of these faculty agreed that information literacy "should be taught collaboratively," the AiA team found that there is confusion among discipline faculty about the definition of information literacy, and the discipline faculty and librarians perceive students' information literacy competency performance differently. In general, discipline faculty tended to define information literacy in terms of skill-based and process-based concepts, rather than essential concepts about information, research, and scholarship. Librarians perceived student performance significantly lower than the global learning faculty on 16 of the 40 Global Learning Information Literacy Framework indicators. The four areas with the most significant difference in perceptions of students' information literacy performance were (1) research as inquiry, (2) authority is contextual and constructed, (3) format as process, and (4) information has value. As a result of these findings, the library will expand its collaboration with the global learning faculty, including discussions to clarify information literacy concepts.
- When a new curriculum was implemented at [Luther Seminary](#) in 2014, courses in which students typically received information literacy instruction were eliminated. The *Framework for Information Literacy* provided a means for the library to restructure its approach to instruction. The librarians worked with five faculty over two semesters and used the *Framework* to match information literacy skills with course assignments; develop rubrics; survey students; gather data; and look for ways to improve library

services, instruction, and support. As an initial piece of the university's move towards more intentional assessment of student learning, the library gained valuable information for collaborating with faculty to develop assignments that incorporate information literacy, creating rubrics, and using a combined quantitative and qualitative learning assessment approach.

Compelling Evidence for Library Contributions to Student Learning and Success

In addition to creating and using methods and tools for conducting assessment in new ways, the AiA projects are yielding impressive findings about student learning. These findings benefit the higher education community by expanding the body of evidence-based assessment results related to students' academic experiences. Four findings about library impact stand out. These findings, which come from assessment projects conducted at different types of institutions, are particularly strong because they consistently point to the library as a positive influencing factor on students' academic success.

1. *Students Benefit from Library Instruction in Their Initial Coursework*

Academic libraries typically place a high priority on information literacy instruction for freshmen and new students to provide these students with a common set of competencies for their undergraduate studies. It's not uncommon for the information literacy instruction to occur in courses required of most or all new students, including general education, first-year experience, and English or composition courses. The assessment results from several second-year AiA projects that focused on information literacy initiatives in these types of courses document that students benefit from the instruction as highlighted by the two projects described below.

- A 50-minute information literacy session is part of the Freshmen Experience 101 course at [West Virginia State University](#). The AiA campus team analyzed students' perceptions of their ability to locate information by comparing pre- and post-session responses to a survey. The 371 self-reported responses indicated that the instruction enhanced students' overall learning experience and their perception of their ability to locate information improved significantly.

[T]he students' perceived learning revealed that information literacy instruction could improve their locating of information ability, demonstrated by the statistically significant difference between students' pre- and post-instruction perceptions of their ability to locate information.

—West Virginia State University

- In the first-year English composition courses at [Our Lady of the Lake University](#), library instruction includes multiple in-person library sessions and required online video tutorials. Pre- and posttest data from 16 course sessions documented a positive relationship between students who completed the online tutorials and their course grades.

In addition, the students reported increased confidence in finding and using quality sources, and 88% of the students found the video tutorials to be informative and helpful.

Several projects from the first year of the AiA program also documented positive contributions of library instruction to students' learning during their initial coursework, including studies by [Claremont Colleges](#), [Pacific Lutheran University](#), the [University of Wisconsin-Eau Claire](#), and [DePaul University](#).

2. *Library Use Increases Student Success*

The results of several AiA library impact studies document that students who used the library in some way achieved higher levels of academic success than students who did not use the library. Two of the second year AiA projects that examined connections between library use and academic success are highlighted below.

- The campus assessment team at [Eastern Kentucky University](#) was interested in looking specifically at undergraduate use of online library resources. The results of its study present evidence that documents strong, positive connections between student use of the library and impact on student learning and success. On average, undergraduate students who logged in to access the libraries online resources had a .20 higher GPA (on a 4.0-point scale) than students who did not access online resources. Additionally, 69% of the study's students who attained high grades (3.0–4.0 GPA) had accessed online resources at least once compared to 58% of students who attained low grades (0–1.0 GPA) and had not accessed any online resources.
- The impact of library use on student success and persistence was the focus of the AiA assessment project at the [Illinois Institute of Technology](#). The team, consisting of the university's retention task force chair, the director of housing, the director of assessment, and the library's coordinator of research and instruction, identified 644 library users (out of a total data set of 2,413 students) who entered the library building, received instruction, visited the Research Help Office, checked out laptops, utilized study rooms, and accessed online resources. These library users had a higher GPA than students who did not have the same level of library usage. The average GPA of the identified group of library users was 3.29, compared to an average GPA of 3.09 of the 2,413 students.

These projects add support to investigations in the first year of the AiA program that point to the benefits gained when students use the library. The campus assessment teams at [Murray State University](#) and [York University](#), for example, triangulated multiple data points to document that library use contributed to students' academic success.

3. *Collaborative Academic Programs and Services Involving the Library Enhance Student Learning*

To provide more comprehensive and integrated approaches to academic support for students, libraries are finding that partnerships with other campus units are yielding promising benefits. Although campuses vary widely in the types of academic support they provide, libraries are realizing numerous opportunities for collaboration to expand and enhance these academic efforts. The benefits of a collaborative approach to academic programs and

services that involves the library were documented by projects in the AiA program's second year at [Eastern Mennonite University](#) and the [University of Nebraska at Omaha](#).

- The Hartzler Library at [Eastern Mennonite University](#) partnered with the Academic Support Center to provide drop-in tutoring services on the main floor of the library during evening hours in the Fall 2014 semester. The AiA assessment team measured the impact of the collaborative services on students' assignment and course grades and on retention rates from the fall to the spring semesters. A high percentage of students, 88%, reported they that their assignment and course grades improved as a result of tutoring. In addition, the retention rate was slightly higher for students who attended drop-in tutoring services, as documented by a 94.8% return rate in the Spring 2015 semester, compared to a 93.6% average retention rate for the university overall.
- Prior to the AiA project at the [University of Nebraska at Omaha](#), the library had not been a direct partner with university initiatives designed to aid student populations that needed extra academic support. The campus assessment team investigated the impact of having a roving librarian at the Project Achieve office, an academic office that serves students with disabilities, first-generation students, and limited-income students. Based on pre- and post-assessment surveys distributed to Project Achieve students during the Fall 2014 and Spring 2015 semesters, students reported higher confidence in finding and using resources for course assignment after a librarian was embedded in the student services office.

During AiA's first year, similar partnerships between the library and other campus units were investigated. The campus team at [Grand Valley State University](#), for example, documented a high level of student satisfaction with Knowledge Market, a collaborative academic service offered by the writing center, speech lab, and library.

4. Information Literacy Instruction Strengthens General Education Outcomes

The library's role in a college's or university's general education curriculum varies widely from campus to campus. The general education curriculum at most colleges and universities is designed to reach all undergraduate students with a broad liberal arts and sciences learning experience that revolves around a core set of institutionally defined proficiencies and academic outcomes. A focus on inquiry and problem solving for students' personal and professional lives and attention to significant social questions typically frame the courses and learning activities. At some institutions, such as [Pierce College at Fort Steilacoom](#), [Temple University](#), and [Western Michigan University](#), information literacy is identified as a core general education proficiency or competency. On other campuses, the library provides instruction and resources to further and complement the institution's general education curriculum. In AiA's second year, some participants investigated the library's impact on their institution's general education outcomes. These projects are advancing our knowledge of library instruction in relation to aspects of inquiry-based and problem-solving learning, including critical thinking, ethical reasoning, global understanding, and civic engagement.

- [Arkansas Tech University](#) identifies critical thinking as a student success indicator, and it is a specific goal of the general education program. The library offers a one-credit hour elective course, Introduction to Library Resources, which is designed to promote higher-order thinking in students. The AiA team at the university investigated whether critical thinking skills were indeed being used in the course. The assessment was based on the TRAILS (Tool for Real-time Assessment of Information Literacy Skills) pre- and posttest rubric for 12th grade. Although the results were inconclusive in connection with many attributes of critical thinking, the rubric did measure and show a positive association between students' ability to use information literacy skills to apply higher-level thinking toward creating a viable thesis statement and supporting the statement with authoritative and relevant resources.

The most significant contribution of the project was that it brought information literacy (IL) awareness to stakeholders within the university. The project opened a conversation about the benefits of library instruction throughout the curriculum. We were able to show the correlation between information literacy and critical thinking and the importance of students' abilities to seek, evaluate, and use information.

—Arkansas Tech University

- At [Temple University](#), the library reaches a large number of students in general education courses. One of those courses, Philadelphia Arts and Culture, enrolls students from all majors at all levels. In the course, students complete the same research assignment three times during the semester and have tended to display improvement between the first and second assignments, but hit a plateau between the second and third assignments. The AiA campus team examined the second and third set of student papers from the course to determine students' achievement of information literacy outcomes as demonstrated in the research papers after participating in a brief library workshop. The team used a three-point rubric that assessed (1) selection of sources, (2) attribution of sources, and (3) integration of sources in the research papers. Thirty sets of papers were assessed before and after the workshops. Overall, students who had library instruction achieved a higher rubric score than those who did not have library instruction.

These results add to the findings from teams in the first year of the AiA program that document positive connections between library instruction and general education outcomes, as exemplified by the projects at [Illinois Central College](#), [Michigan Technological College](#), [Southern Connecticut State University](#), the [University of Idaho](#), and the [University of Redlands](#).

Building Evidence for Library Impact

The AiA projects are building evidence for library impact in other areas as well. The results of some of these investigations are described below. While these impact areas may not have been studied as extensively as the four areas discussed in the previous section or the project findings may not be as consistently strong, the assessment results do build evidence for positive connections between the library and students' academic success.

Student Retention Improves with Library Instructional Services

At most higher education institutions, student retention is designated as a high priority, and the campus library's contributions to this priority are receiving attention and recognition as a result of assessment studies that investigate the connection. Determining retention rates can include different measures, but the focus is typically on a student's continued progress from one semester to the next or a student's persistence toward degree completion. One of the eleven AiA projects in Year 2 that investigated retention in relation to library factors is highlighted below.

- The guiding inquiry question for the [NorthWest Arkansas Community College](#) (NWACC) campus team was, "Do the NWACC library's information literacy instruction sessions for English Composition I have a measurable effect on student success and retention?" The team tracked students' attendance in all of the information literacy sessions that are part of the English composition course to assess the impact on performance in the course and retention from the Fall 2014 semester to the Spring 2015 semester. The project's findings revealed that a significant percentage of the students who attended the information literacy sessions in the fall term (83.7%) enrolled in the spring term, compared with only 62.5% of the students who did not attend all of the sessions. Final course grades were also significantly higher for those students who attended the information literacy sessions.

This project is one of the first that the library has undertaken to track the impact of our information literacy instruction services. In that regard, the simple acts of collecting, studying, and reporting data to our colleagues throughout the college is a huge step for us—it's a way of communicating to other stakeholders that we take student learning seriously and want to be active participants in facilitating student success and retention.

—NorthWest Arkansas Community College

This study documents the benefits of library instruction for improving an institution's student retention and corroborates the findings about retention and persistence of AiA projects from the program's first year. [Arizona State University](#), for example, found that at-risk freshmen students who successfully complete a critical thinking course with an integrated information literacy component persist at a higher rate than those who do not take the course.

Library Research Consultation Services Boost Student Learning

Several campus teams in AiA program's Year 2 were interested in assessing the impact of library research consultation services that provide one-on-one assistance to students. At some institutions, consultation services provide opportunities for customized, focused instruction, which is highlighted in the overview of [Wayne State University's](#) assessment of its research consultation services. At other institutions, such as [Michigan State University](#), research consultation services are offered off-site from the library and may use a new service design.

- At [Wayne State University](#), the campus team formulated its inquiry question, “How do students describe the experience of the research consultation and its value to them?” and conducted semi-structured interviews with four undergraduate and six graduate students who completed an in-person research consultation session with a librarian. The two most prominent themes to emerge from an analysis of the interview data were “learning” and “confidence.” All ten students reported learning about a resource, service, and searching technique and having more confidence in doing research as a result of the consultation session.
- The [Michigan State University](#) libraries are one of a network of five student services that form a hub adjacent to the undergraduate student dorms. When the libraries changed the staffing of this research assistance service from librarians to trained students, there was a significant increase in activity. The AiA project team was interested in exploring the impact of the peer research assistants (PRA) on aspects of student success as demonstrated by student GPA and retention. Although the team discovered the complexity of factors that likely affect retention issues, particularly among first-year students, a positive association between those students who used the PRAs and retention was documented. In addition, the GPAs of students at all degree levels who met with the PRAs were higher than students who did not use the service.

In the first year of the AiA program, the impact of library research consultation services was also studied. [Dalhousie University](#), for example, documented a positive connection between the library's one-on-one Research Assistance initiative and improved student GPAs, and [Dakota State University](#) found that the personal assistance of librarians with online graduate education students was a contributing factor to improved grades on research papers.

Library Instruction Adds Value to a Student's Long-Term Academic Experience

First-year courses that all freshmen take provide excellent opportunities for the library to reach a majority of students and present core information literacy instruction that serves as a foundation for their subsequent coursework. Many academic libraries are increasingly looking at the impact of this instruction as students move through their academic studies. In addition, the development and assessment of library instruction provided after the first year is receiving attention, particularly when information literacy competency is designated as one of the college's or university's core proficiency. As students progress in their studies, library instruction usually needs to use a scaffolded approach to teach more specialized research strategies or discipline-specific content. Two AiA projects highlighted below address issues related to the assessment of library instruction beyond the first year.

- The Briggs Library staff at the [University of Minnesota, Morris](#) collaborated with instructors of the freshman writing course by providing a two-class library instruction program. The librarians were interested in assessing the program's long-term efficacy and formed an AiA campus team to design and test a four-year panel study. The inquiry question that guided the team's development of a survey-based assessment method was, "What information literacy skills are retained after course completion, and how does additional library instruction in upper-level classes allow further skill development?" Survey results of two freshman writing classes in Spring 2015 showed improvement in student information literacy skills as a result of the library instruction sessions. Additionally, seniors who participated in the assessment also demonstrated information literacy improvement; however, the limited number of seniors who participated in the assessment was low and other potential influencing factors make the project's results about seniors less definitive. Findings from the assessment of freshmen and seniors' information literacy competence are being used to implement a full four-year panel study beginning in Fall 2015.
- At [Champlain College](#), all undergraduate students receive information literacy instruction seven times throughout their undergraduate studies, regardless of their major. The information literacy is fully course-embedded, sequential, and scaffolded. The AiA program provided an opportunity to design and test a developmental rubric with a primary goal to build a longitudinal model of information literacy assessment. For the project, the team sampled a set of 57 annotated bibliographies prepared by freshmen, which represented 10% of the Class of 2017. Each artifact was assigned a key code prior to assessment, which will allow for tracking in future assessment activities throughout a student's undergraduate studies. The findings from the first year of assessment revealed that students performed better than expected in two areas: (1) selecting appropriate strategies and tools to access information, and (2) attribution. However, there was lower performance related to identifying questions for investigation and synthesizing information located in sources. These initial findings provide the librarians with useful information for revising freshmen-level information literacy in areas that students find challenging. As a result of the AiA project, the library now has a rubric and assessment process that it plans to use with common assignments that students complete in their junior and senior years.

The value of information literacy competencies as students complete upper-level courses and capstone projects was also investigated during AiA program's first year, including a project at [Lasell College](#) that assessed information literacy skills of graduating seniors.

The Library Promotes Academic Rapport and Student Engagement

Academic libraries can play a unique role in contributing to students' sense of academic rapport with the college or university. Academic rapport can influence student motivation, academic engagement, and enjoyment of courses and learning in general. Faculty and staff availability, responsiveness, interacting and showing an interest in students, and understanding that students encounter personal problems that may affect their academic work are all attributes that foster academic rapport. Some academic libraries are investigating ways that they might create conditions that promote academic rapport as exemplified by the [University of Alberta's](#) AiA project.

- To enhance the library experience of Aboriginal (native) students at the [University of Alberta](#), the library initiated PLAS: Personal Librarian for Aboriginal Students. Incoming students were partnered with a librarian, who maintained contact with the student and provided research strategies in face-to-face meetings or by email. Students and librarians who participated in the program were surveyed at the end of the academic or project year. Preliminary survey results indicate that the program encouraged students to visit the library and to use the services and collections more effectively. As the lead team librarian noted, “[The program] created a positive environment for their learning and research, and helped demystify the library and lessened their anxiety toward it.”

We are pleased to announce that the library administration has approved the continuance and even growth in the initiative! In the coming academic year it will serve the same audience (Aboriginal students); however, during this year relationships will be built with campus partners who serve international students and "academic-at-risk" students.

—University of Alberta

Projects in the first year of the AiA project also looked at library factors in relation to promoting academic rapport. The campus team at [Montana State University](#), for example, found that the library’s social media activities had a positive impact. As the lead librarian noted, “[Social media] create community, and that community contributes to student success. Our research suggests that community building is a new value for the library and a new role libraries can play with regards to student success.”

Use of Library Space Relates Positively to Student Learning and Success

Several AiA campus teams have investigated the role of library space and its potential impact on students’ academic experience. Five institutions in AiA program’s second year studied this relationship, and the projects at [Knox College](#) and [Wake Forest University](#) highlight the numerous factors that can be assessed.

- At [Knox College](#), the AiA team studied the academic preferences of students enrolled in STEM courses, particularly in relation to their use of the campus libraries. Using a mixed methods approach that collected data through a focus group, a survey, interviews, and observation, the team examined how and why students used the science library and what factors might increase use. The assessment results indicated preferences for a variety of study spaces that accommodate quiet, communal, and collaborative study for individuals and groups.
- Future programs and services at the Z. Smith Reynolds Library at [Wake Forest University](#) will be informed by the work of the AiA campus team, which focused on the key question, “Does student use of library resources, spaces, and services correlate with greater self-efficacy in student-defined measures of success?” The team learned that the library frequently serves as an important space for studying and academic connection with other students, particularly during students’ freshman year. The library staff is now considering ways to expand the library’s role in promoting student academic engagement.

In the first year of the AiA program, [Central Washington University](#), the [University of Massachusetts Dartmouth](#), the [University of Manitoba](#), and the [University of Northern Colorado](#) also investigated ways that library space contributes to student learning and success.

Collaborative Assessment Fosters Library Leadership

The importance of assessment as a means for the library to expand and strengthen its role as a partner in advancing the academic success of students on a campus has been an important outcome of the AiA projects in both the first and second years of the program. A collaborative, team-based approach to these assessment activities has been particularly important. The project reports frequently note ways that collaboration furthers understanding among diverse campus constituents and advances library leadership.

Collaborating for Understanding

The design of the AiA program requires the creation of an assessment team consisting of members who represent campus units or departments beyond the library, which means that a team-based approach to assessment is established from the start. The AiA librarians have reported that the collaboration among team members promoted a shared understanding of an institution’s academic priorities and the contributions of various campus stakeholders to these priorities. As a result, AiA participation fostered engaged communities of inquiry among campus teams and served as a developmental opportunity for all team members, not just the librarian leaders.

Our team had good collaboration and camaraderie. . . . [W]e all came to the project with a limited understanding about how the assessment would happen, so it allowed us all to learn together, gaining trust as we went. We also all had a shared desire to improve student services. Each of us came to the team with different skills to share.

—AiA librarian, reflective report

Diverse expertise and experience are again reflected by the campus teams’ compositions in Year 2, as indicated in the following table.

Table 6. The Compositions of AiA Teams

AiA Team Members	Year 1	Year 2	Total
Teaching Faculty	54	47	101
Other Librarian	51	47	98
Library Administrator	21	32	53
Institutional Research	28	31	59
Assessment Office	28	28	56
Other (e.g., speech lab, teaching/learning center, doctoral student)	19	15	34
Writing Center	10	11	21
Information/Academic Technology	5	7	12
Campus Administrator	16	8	24
Student Affairs	12	8	20

Establishing partnerships across the campus for assessment work prompts consideration of the unique roles and functions of different campus units in relation to students' academic success. Several librarian team leaders reported that discussions about the primary focus of the project, the type of data needed to answer the inquiry question, and the most appropriate method(s) for gathering the data led to increased awareness among the team members about different perspectives on student learning and institutional priorities among the various campus units and departments. Identification of multiple types of data and sources for generating data, particularly beyond what the library might produce on its own, also expanded and enriched the teams' understanding of how student learning could be measured and described.

We learned about data collection, data cleanup, collaboration, teamwork, and the importance of buy-in from all parties. We learned to go beyond simple counts and to search for relationships to larger issues.

—AiA librarian, reflective report

The collaborative approach also led to important conversations that got to the heart (and complexity) of teaching and learning. Each team member brought experience and a unique viewpoint to the discussion of such topics and issues as (1) core learning outcomes that all undergraduate students should achieve, (2) attributes that define “academic success,” (3) the connection of academic rapport to student learning, and (4) the relationship of classroom learning to career success. As one lead librarian noted, “I believe that the most valuable aspects of this project were the formal and informal conversations and discussions about student learning and assessment. We all learned something new from each other and became more aware how other departments on campus work toward similar goals and face similar challenges.” These kinds of discussions also occurred in the libraries among the staff as a project progressed. The potential contributions of library instruction within the broader context of students' learning and academic experiences on the campus, for example, were considered. Meaningful assessment required clear articulation and common agreement about the specifics of academic factors and learning attributes that would be measured. These discussions, which were challenging at times, were essential to the collaborative assessment work being carried out.

Collaborating for Results

Collaboration with other campus units was also a means for the libraries to broaden their contribution to academic services and initiatives on the campus. The AiA program was the framework for several libraries to initiate a new program, service, or library practice and assess its impact.

- At the [University of Pittsburgh-Pittsburgh Campus](#), for example, a new outreach effort was developed for referring students to the library who visited or contacted non-subject academic units. As the lead librarian explained, “[T]he project was successful in opening communication and building partnerships with campus departments including the Office of Student Affairs and ultimately led to mutual opportunities that were previously unexplored.”

- At [Wake Technical Community College](#), the library collaborated with the English faculty and discovered new ways to expand its contributions to campus-wide assessment. The campus team investigated the impact of the library’s information literacy instruction on student success. In addition to documenting a positive impact, the library increased its relationship with the English faculty and also noted that other departments on the campus recognized the library as more than a facility for books.

In these two examples, the librarians took a leadership role that was collaborative and results oriented, and that initiative contributed directly to improving student learning and success at the institution.

Collaborating to Increase Library Advocacy

By leading a campus team through an assessment project, the AiA librarians advanced the mission of the library in alignment with institutional priorities. The library’s contributions to enhancing student learning and increasing academic success and the critical role of librarians in documenting these efforts were noticed. On many campuses, the library is now recognized for its ability to plan and carry out assessment in ways that produce meaningful evidence about student learning. In more than one instance, AiA librarians saw the fruits of their efforts realized when the other team members or faculty and administrators outside the library advocated on behalf of the library. As one lead librarian explained, “The two non-librarians [on the team] are enthusiastic supporters who found the whole experience meaningful.”

After the project, the campus community (including administrators) is becoming more aware of the value of the library space in the students' academic experience. Faculty have told me their students were very pleased with the service and they began advertising drop-in tutoring in their classes the second semester of the service because it was so successful with students the first semester.

—AiA librarian, reflective report

The AiA librarians reported that the team-based assessment project expanded and strengthened their leadership and advocacy skills as they led the campus team and, in the process, put theory into practice. While it is relatively easy to acknowledge the importance of effective project management, the actual experience of negotiating group dynamics and keeping a team on track is more difficult. For many of the librarians, the AiA professional development fostered professional and personal growth by integrating action with reflection. As members of a learning community during the 14-month program, the librarians were able to problem solve and test ideas in a collaborative, supportive environment. In their project and reflective reports, the librarians frequently mentioned building competencies in the following areas: (1) initiating partnerships with individuals and departments across campus, (2) feeling confident with leading team-based activities, (3) managing the process and practice of assessment, and (4) communicating the library contributions to students’ academic success based on the project findings. This learning changed the librarians at an individual, personal level, which was then realized through their increased presence and involvement within the library and on the campus.

I think this project has granted me some authority on campus and among our library staff that I didn't have previously—I feel more comfortable being able to approach faculty with ideas and be an advocate and representative of the library now that I've led a project that involved professionals from all over campus.

—AiA librarian, reflective report

Conclusion

As the AiA campus teams investigate and report on the impact of different library factors on student learning and success, the evidence-based assessment findings about the positive contributions of the library to students' academic success grow. The project activities are grounded in action research, which means that the focus is on institutional priorities and using the assessment findings to inform and improve academic initiatives in ways that are meaningful and sustainable. As a result, the library is increasingly recognized as integral to advancing the academic success of students at higher education institutions.