

ACADEMIC LIBRARY IMPACT ON STUDENT LEARNING AND SUCCESS:

Findings from Assessment in Action Team Projects

April 2017



*Advancing learning
Transforming scholarship*

Association of College & Research Libraries
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Executive Summary

Since 2013, over 200 postsecondary institutions of all types have participated in the Association of College and Research Libraries' (ACRL) Assessment in Action program (AiA) that created campus-wide partnerships at institutions to promote collaborative assessment and library leadership.¹ The AiA program was launched by ACRL, in partnership with the Association of Institutional Research and the Association of Public Land-grant Universities, and with funding from the US Institute of Museum and Library Services.

At each participating institution, an AiA team, consisting of a librarian and at least two representatives from other campus departments or units, planned and implemented a project that aligned with institutional priorities and contributed to campus assessment activities. The extensive collection of assessment methods and tools used by the campus teams during the three-year AiA program point to multiple types of library factors and their potential impacts on students' academic outcomes. Higher education institutions are encouraged to replicate or adapt these approaches to expand understanding of student learning and to assess library contributions to academic outcomes at their institutions.

Compelling Evidence for Academic Library Contributions to Student Learning and Success

The higher education community now has compelling assessment findings that tell a strong story about the multiple ways that academic libraries are contributing to student learning and success. While each institutional context is unique and the AiA project findings about library impact are not generalizable to all academic settings, the demonstrations of positive connections between the library and aspects of student learning and success in five areas are particularly noteworthy.

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 database access, study room use, interlibrary loan) shows that students who used the library in some way achieved 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/y3_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 library instruction improves students' achievement of institutional core competencies and general education outcomes. The project findings demonstrate different ways that information literacy contributes to inquiry-based and problem-solving learning, including effective identification and use of information, critical thinking, ethical reasoning, and civic engagement.

5. Library research consultations boost student learning.

One-on-one or small-group reference and research assistance with a librarian enhances academic success, as documented by such factors as student confidence, GPAs, and improved achievement on course assignments.

Having overall consistent assessment findings of library impact in these five areas—across a body of over 200 projects—is strong in part because of the variation. Each setting is unique; each library program and service differed in its design and implementation (as appropriate for that unique local context); students had many difference characteristics and backgrounds; there was a multiplicity of methods for investigating the library impact on students.

Because the assessment findings are derived from action research, which situates the investigations in authentic institutional contexts, the results reflect “on the ground” practices in terms of resources available and campus priorities. While libraries should routinely assess for internal improvement, findings from the AiA projects lessen the need to question whether investments of time, resources, and energy in these areas will bring about a positive impact.

Promising Evidence of Library Impact

The AiA projects continue to build evidence of library impact in other areas as well. Investigations in four areas point to evidence of promise. The assessment of library impact in these areas, however, tends not to have been investigated as extensively as those noted above or the findings may not be as consistently strong. Even so, the growing number of studies in these four areas have yielded promising results about positive connections between the library and students' academic success.

- *The library contributes to improved student retention.*
- *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.*

Advancing Library Leadership through Action Research

The action research framework, which emphasized improving practice through systematic investigation of a question grounded in institutional context, engaged the librarians in an immersive process of ongoing interaction with one another and collaboration with their campus team members. The librarians led the design and implementation of assessment that related directly to their campus's academic priorities, creating opportunities for substantive conversations with campus stakeholders about student learning and resulting in meaningful findings that informed decision making about library programs and practices. The leadership qualities that were strengthened through this process include an awareness of the importance of inquiry and decision making grounded in institutional context, understanding and experience with the dynamic nature of assessment, and a recognition of the personal and professional growth that emerges through collaboration with others.

Introduction

Since 2013, over 200 postsecondary institutions of all types have participated in the Association of College and Research Libraries' (ACRL) Assessment in Action program (AiA) that created campus-wide partnerships at institutions to promote collaborative assessment and library leadership. This report focuses on the third year of the program and synthesizes results from the team-based projects led by librarians at fifty-five higher education institutions primarily from across North America. These assessment projects contribute additional findings to the evidence of library impact generated by the 148 campus teams that participated the first two years of the program.²

The AiA program was launched by ACRL, in partnership with the Association of Institutional Research and the Association of Public Land-grant Universities, and with funding from the US Institute of Museum and Library Services. Three primary goals framed 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.

At each participating institution, an AiA team, consisting of a librarian and at least two people from other departments or units, planned and implemented a project that aligned with institutional priorities and contributed to campus assessment activities. The teams were led by the librarian, and other team members typically included teaching faculty and administrators from such departments as the assessment office, institutional research, the writing center, academic technology, and student affairs. Over a fourteen-month period, the librarians worked with their campus teams to investigate connections between library factors and aspects of student learning and success.

The lead librarians were supported throughout the project by a peer-to-peer learning community that combined in-person workshops and sequenced online professional development activities designed to advance an action research approach to assessment. This approach emphasizes an assessment process that merges theory with practice to yield results that inform and improve practice. Skill building through collaborative and reflective problem solving was the centerpiece of the professional development. The AiA librarians increased their assessment and leadership competence as they guided their campus team through a process of identifying an inquiry

² Read more about the first-year and second-year participating institutions in reports synthesizing the projects results each year: *Academic Library Contributions to Student Success: Documented Practices from the Field* (January 2015), available at www.ala.org/acrl/files/issues/value/contributions_report.pdf, and *Documented Library Contributions to Student Learning and Success: Building Evidence with Team-Based Assessment in Action Campus Projects* (April 2016), available at www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/value/contributions_y2.pdf.

question related to institutional priorities, determining appropriate assessment methods, interpreting the data, and communicating the project results. This team-based approach has produced assessment results that connect directly to practice and promote sustainable change around library services and programs that contribute to student learning and success. The library also increases its visibility and gains recognition among campus constituent groups for its advancement of academic initiatives at the institution.

[Tulsa Community College] librarians learned through this project that a more college-wide and coordinated effort toward curriculum development and assessment was needed to achieve success in [library] instruction. An information literacy steering committee was formed as a result of this project and librarians now serve as embedded liaisons to each academic division.

- [Tulsa Community College](#)

The third year of the AiA program ran from April 2015 to June 2016, and results of the assessment projects were presented in poster sessions at the 2016 American Library Association Annual Conference in Orlando, Florida, June 24 and 25. Each team leader completed a final project descriptive report, which includes an abstract and image of the poster, and these reports are fully searchable in an [online collection](#).³ In addition, the team leaders completed 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 conducted in June 2016 with a total of twenty-one AiA third-year librarians. The projects described in this report highlight only a few of the third-year projects; full reports on the projects are posted in the searchable database.

Participation by a Variety of Higher Education Institutions

The fifty-five AiA campus teams that participated in the third year of the AiA program represented a variety of types of colleges and universities and came from twenty-four states, the District of Columbia, and Australia (see table 1 and figure 1).

³ Assessment in Action respondent search page, accessed April 10, 2017, <https://apply.ala.org/aia/public>.

Table 1. Types of institutions for teams selected into the AiA program, Years 1–3.

Institution Type	Year 1	Year 2	Year 3	Total
Associate’s Colleges	10	13	3	26
Baccalaureate Colleges	7	15	10	32
Master’s Colleges and Universities	32	11	18	61
Doctoral/Research Universities	6	4	2	12
Research Universities (High/Very High Research Activity)	18	23	21	62
Tribal Colleges	1	1	0	2
Special Focus Institutions (medical, culinary, theological seminary)	1	6	1	8
TOTAL	75	73	55	203

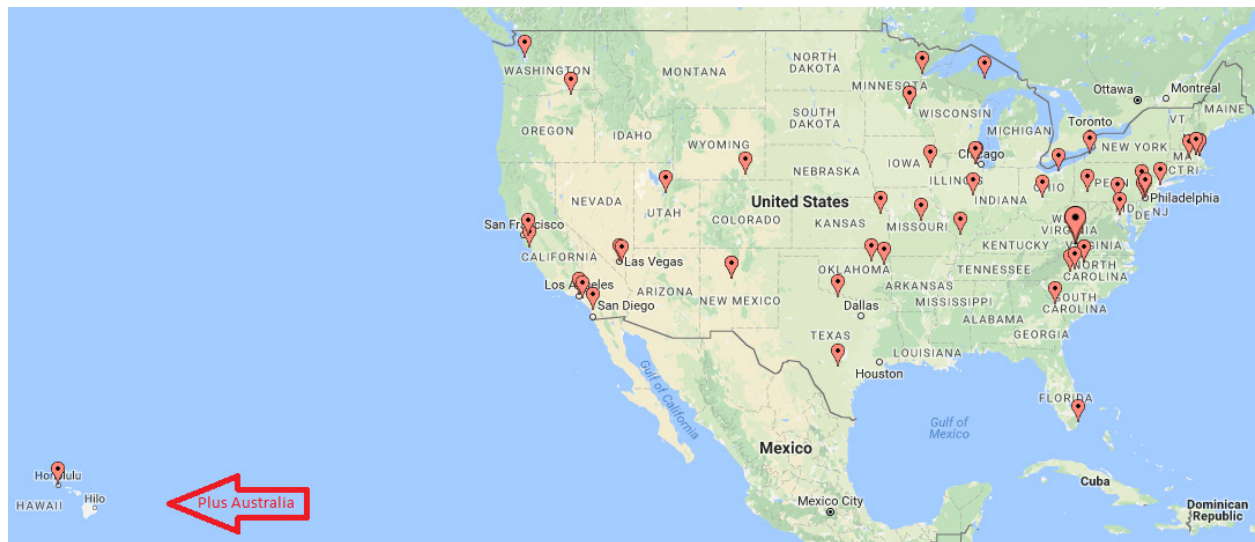


Figure 1. Map of institutions selected to participate in the third year of AiA.

The institutions are represented by a variety of different accrediting bodies, including seven US regional, one specialized, and one Australian (see table 2).

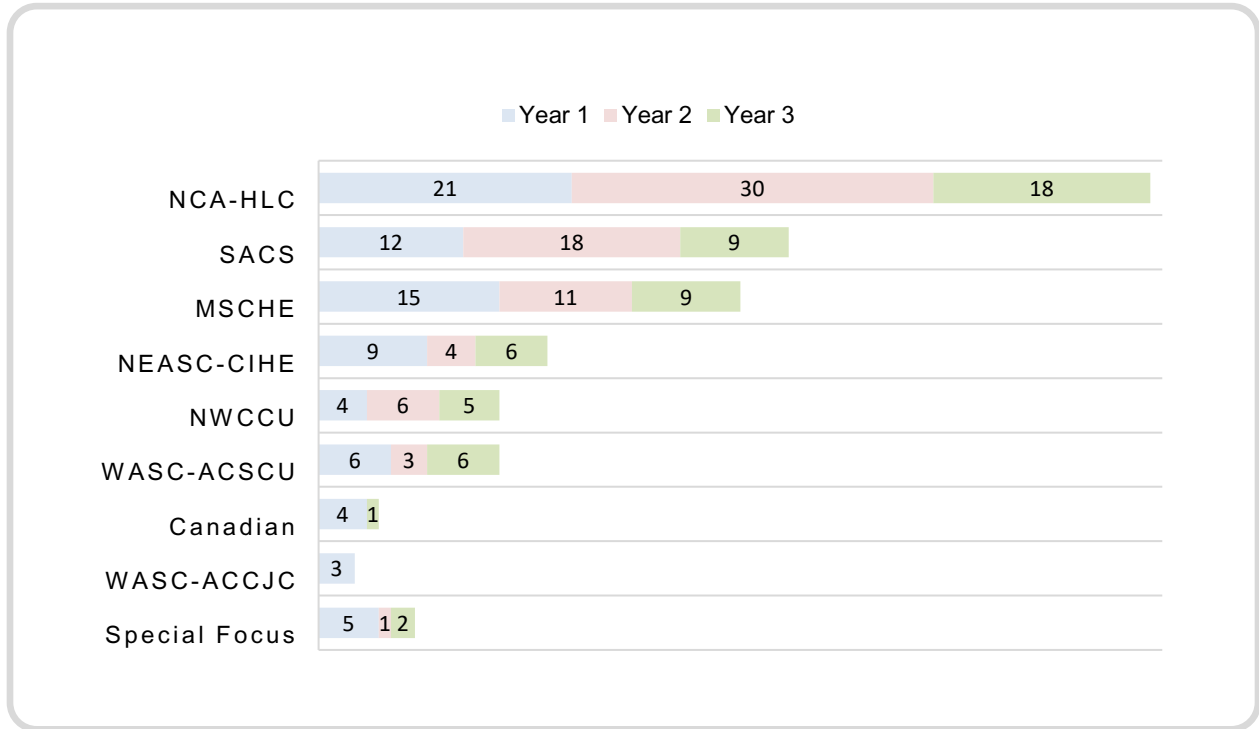


Table 2. The accreditation agencies of institutions selected into the AiA program, Years 1–3.

At some institutions, an accreditation self-study was underway during the AiA program period, and the campus project was an important contribution to the final report.

Our Director of Assessment is pleased that we did this project; it became one of our Action Projects for accreditation, using actual assessment of student learning to demonstrate the value of the library. It has also demonstrated ways to assess student learning that go beyond satisfaction surveys. (Our accrediting agency made a specific request that we find ways to assess learning as opposed to satisfaction.)

- [Northern Michigan University](http://www.nmu.edu)

Investigating Connections between Library Factors and Academic Outcomes

Each campus team generated an assessment inquiry question that took into consideration the institution’s mission and academic priorities and focused on the relationship between a library factor (e.g., collections, space, instruction, reference, etc.) and an aspect of student learning and success (e.g., course or program learning outcomes, student confidence, retention, persistence). In the third year of the AiA program, campus teams investigated eleven attributes of student learning and success and thirteen library factors (see tables 3 and 4).

Table 3. The number of AiA projects that investigated the listed academic outcome.

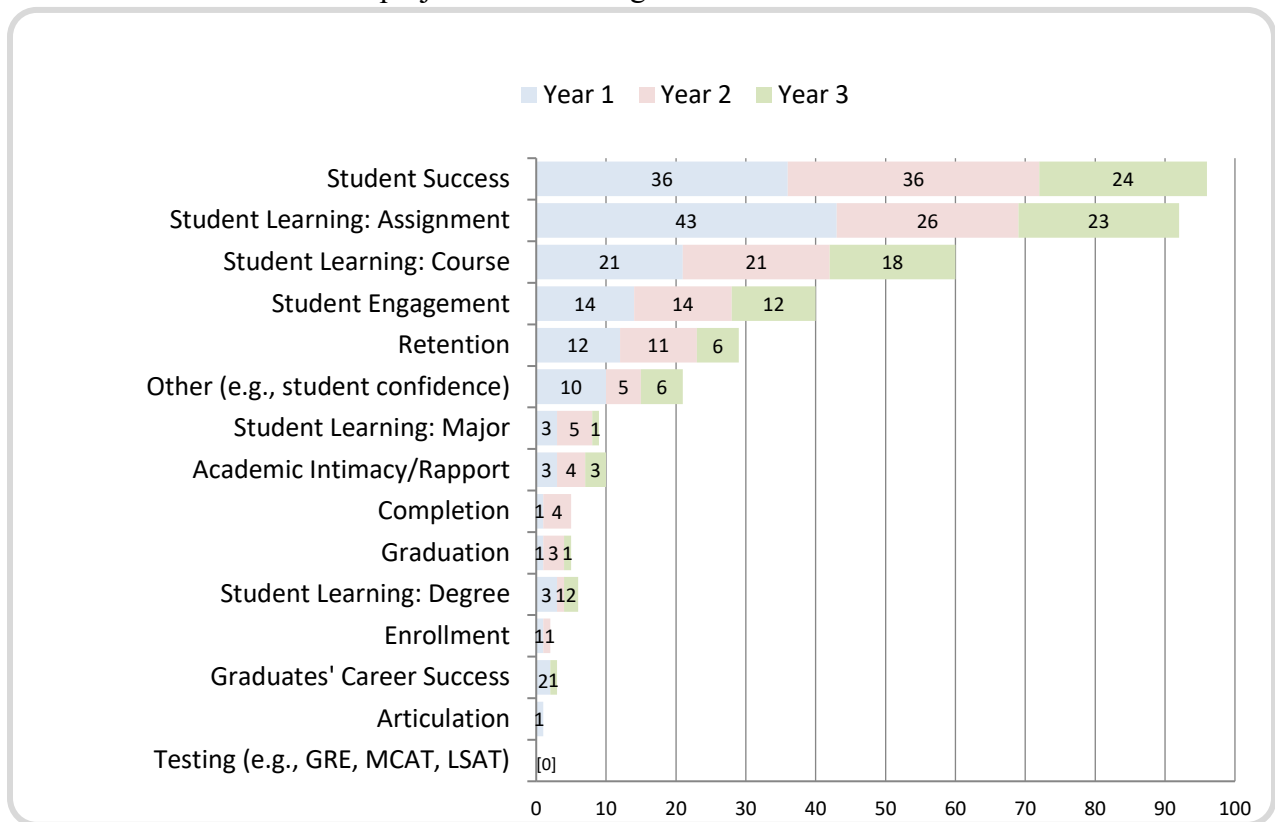
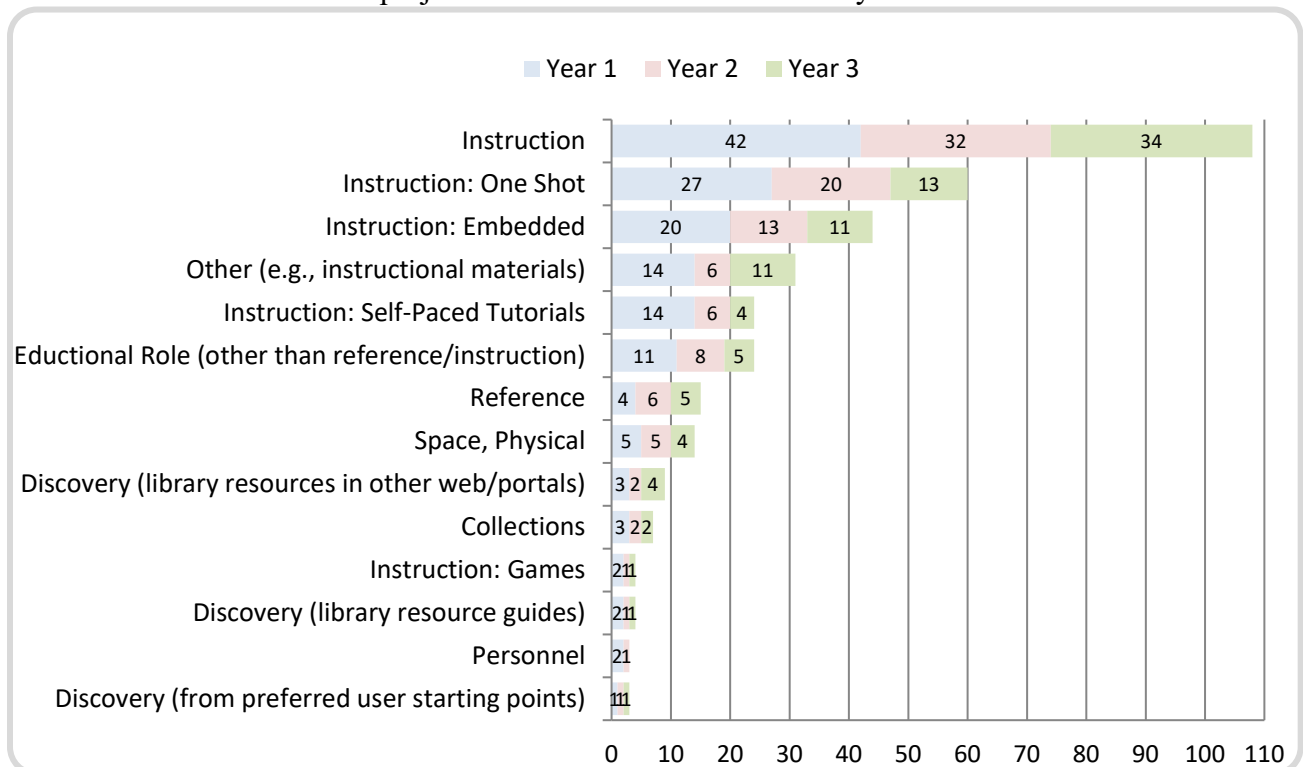


Table 4. The number of AiA projects that assessed the listed library factor.



The following ten sample inquiry questions from the third year of the program highlight the various types of library impact examined. For some campuses, the inquiry question focused on determining whether or not the library had an impact on students' academic outcomes. Other institutions investigated how the library might be contributing to student learning and success.

- What impact can expanded library engagement based on the ACRL *Framework* have on information literacy knowledge, skills, and habits of mind in a university writing program? ([Boston University](#))
- Does embedding a librarian and library resources into an online-only class improve quality of students' research skills? ([California State University, Fullerton](#))
- How important are information literacy skills to achieving success as a medical student? ([Edward Via College of Osteopathic Medicine](#))
- What is the impact of integrating information literacy learning outcomes in a first-year general education course? ([State University of New York at Fredonia](#))
- Do students select space in the Learning Studio that best suits their needs? ([University of Kansas](#))
- Do students at [the University of Pittsburgh-] Greensburg demonstrate a progressive increase in their information literacy skills as they move through their coursework toward degree completion? ([University of Pittsburgh-Greensburg](#))
- How does library engagement affect the grade point averages (GPAs) of sophomores and juniors at the University of Southern California? ([University of Southern California](#))
- Does faculty-librarian collaboration benefit student disciplinary research and writing practices? ([University of St. Thomas](#))
- What type of library instruction is most effective for students in upper-level communication courses? ([University of Wyoming](#))
- How does research instruction impact students' ability to transfer research skills from one project to the next? ([University of Massachusetts Boston](#))

Assessment Methods and Approaches

The inquiry question also informed a team's decisions about the most appropriate data needed to answer the question and the means for generating the data. Both quantitative and qualitative assessment approaches were used by the campus teams, with a large percentage incorporating a mixed-methods approach. As in the previous two years of the program, surveys, rubrics, and pre- and posttest methods were the most common assessment methods employed to generate data (see table 5).

Table 5. Summary of assessment methods and tools.

Assessment Methods and Tools ^a	Year 1	Year 2	Year 3
Survey	41	31	28
Rubric	40	26	19
Pre- and Posttest	23	23	14
Other (e.g., correlational analysis, content analysis)	20	15	13
Interviews	13	7	4
Observation	10	9	4
Focus Group(s)	10	6	4

- a. The totals on the table columns do not equal 74, 64, 52, or 190 (i.e., the number of AiA teams completing the program and reporting in Year 1, Year 2, and Year 3, respectively) because many teams used more than one assessment method and/or type of measure.

The numerous methods and tools that the AiA teams have used to investigate library impact over the past three years are providing the academic library profession with a wide array of approaches to consider for assessment initiatives. These approaches expand and enrich the profession's knowledge of different ways to assess student learning and success in relation to library services, resources, and practices. In Year 3, for example, the use of ethnographic methods at the [University of Iowa](#) and Dynamic Criteria Mapping at [Elmhurst College](#) introduced new AiA approaches to generate data that helps us better understand the complexities of students' academic experiences.

- At the [University of Iowa](#), the campus team investigated the libraries' outreach and informal learning activities in relation to students' critical and creative inquiry and their knowledge creation. These activities are part of the libraries' new engagement program and include, for example, Break from Busyness (BFB), which provides opportunities for short breaks from studying to participate in such activities as redacted poetry and zine making. While the team found that assessing student learning and engagement with interviews and surveys after the events was difficult, the use of ethnographic and autoethnographic methods during the events resulted in rich, multilayered data about library engagement. The assessment methods captured student perspectives on the college experience and their perceptions of the library. This information provides insights into students' needs and suggests ways that the library can plan programming that addresses those needs.
- Dynamic Criteria Mapping (DCM), a qualitative, constructivist method of writing assessment, was used at [Elmhurst College](#) to investigate the impact of information literacy instruction in freshman composition classes. After reading student papers from

first-year English composition courses, librarians and writing faculty participated in a workshop consisting of a series of generative small-group and large-group discussions to explore connections between information literacy and student writing. DCM is designed to engage academic communities in consensus-building discussions, which was the result of the assessment activities at Elmhurst College. The library plans to expand its use of this methodology to include more student artifacts and involve more workshop participants.

By applying DCM [Dynamic Criteria Mapping], librarians and writing faculty engaged in cross-disciplinary conversations, developing consensus on what we value when we read first-year writing projects in light of research skills and information literacy and reconciling disparate disciplinary terminology. Our project assists our institution's goals of assessing components of our general education program.

- [Elmhurst College](#)

The third year of AiA saw several campus teams include the ACRL [Framework for Information Literacy in Higher Education](#)⁴ in their projects and use elements of the *Framework* to assess student learning (i.e., [Arcadia University](#), [Augusta University](#), [Boston University](#), [DeSales University](#), [University of New Mexico](#), and [University of Minnesota Duluth](#)). [Arcadia University](#), for example, applied the ACRL *Framework* in its library instruction and gained insights into how students learn the integration of research and writing processes, and the [University of New Mexico](#) used the Information Creation as a Process frame as a lens to understand better how students perceive different information formats in their research. Both projects are briefly described below.

- [Arcadia University](#) assessed reflective writing as a means to help students think about research as an iterative process and the connection of research to the writing process. After modifying and expanding the reflective assignments in the first-year writing course, the AiA campus team developed a rubric to assess students' reflective assignments and their final argument papers. The complex and time-intensive scoring of these student products limited the study to an evaluation of the work of ten students. The findings, however, showed that students had only minimally conceptualized research as a part of the writing process. In addition to expanding assessment in this area, one recommendation that the campus team made was to provide students with clearer assignment prompts and to improve the scaffolding of reflective activities to help students learn how to reflect more deeply.
- The [University of New Mexico](#) campus team considered the Information Creation as a Process frame to study how students perceive and understand different information formats. In the Spring 2016 semester, 668 students enrolled in a Freshman English course participated in flipped library instruction, which included using an online tutorial about

⁴ Association of College and Research Libraries, *Framework for Information Literacy for Higher Education* (Chicago: Association of College and Research Libraries, 2016), www.ala.org/acrl/standards/ilframework.

information formats, evaluating different formats, and choosing appropriate sources to support their writing. The assessment results indicate that students' understanding of formats, in general, tends to be rudimentary and often mistaken. The lead librarian noted, "We need to talk with students about the communicative purpose of formats and how that purpose is reflected in both the product and process."

Taken together, the results of studies that investigated aspects of the *Framework* reveal new findings about the complexities of student learning and the potential impact of information literacy instruction on students' academic success.

The extensive collection of assessment methods and tools used by the campus teams during the three-year AiA program point to multiple types of library factors and their potential impacts on students' academic experiences. Higher education institutions are encouraged to replicate or adapt these approaches to expand understanding of student learning and to assess library impact on students' academic success at their institutions.

Strengthening and Expanding Compelling Findings

Four compelling findings about library contributions to student learning and success were highlighted in last year's AiA summary report:⁵

1. Students benefit from library instruction in their initial coursework.
2. Library use increases student success.
3. Collaborative academic programs and services involving the library enhance student learning.
4. Information literacy instruction strengthens general education outcomes.

The results of the third-year assessment projects, which are discussed in this report, strengthen these findings with additional evidence. The findings of projects that assessed library research consultation services in the previous two years, and now in Year 3, indicate a strong association between research consultations and improved student learning. These results support adding a **fifth** area of compelling library impact:

5. Library research consultations boost student learning.

While each institutional context is unique and the AiA project findings about library impact are not generalizable to all academic settings, the demonstrations of positive connections between the library and aspects of student learning and success in these five areas are particularly noteworthy. Having overall consistent assessment findings of library impact in these five areas—across a body of over 200 projects—is strong in part because of the variation.⁶ Each setting is

⁵ Association of College and Research Libraries, *Documented Library Contributions to Student Learning and Success: Building Evidence with Team-Based Assessment in Action Campus Projects*, prepared by Karen Brown with contributions by Kara J. Malenfant (Chicago: Association of College and Research Libraries, 2016), www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/value/contributions_y2.pdf.

⁶ A forthcoming ACRL action-oriented research agenda, by OCLC Research, is expected to be released in summer 2017. It will augment the findings of this report by considering a wider array of evidence. It will consider the AiA projects and take a deep look at over 500 documents, including scholarly and practice-based literature from the LIS

unique; each library program and service differed in its design and implementation (as appropriate for that unique local context); students had many difference characteristics and backgrounds; there was a multiplicity of methods for investigating the library impact on students.

We now have compelling assessment findings that tell a strong story about the multiple ways that libraries are contributing to student learning and success. We know much more about effective library practice; libraries that engage in these five practices can anticipate positive contributions to students' academic experiences. While these project findings may not be generalizable, as you would expect of social science research from a positivist perspective, they can be adapted to other settings with care and consideration to local context. Because the findings are derived from action research, which is situated in authentic institutional contexts, the results reflect "on the ground" practices in terms of resources available and campus priorities. Therefore, we urge academic libraries to grow and strengthen high-quality programs and services in these areas of effective practice. While libraries should routinely assess for internal improvement, findings such as these from the AiA projects lessen the need to question whether investments of time and energy in these areas will bring about a positive impact.⁷

Specific projects by Year 3 AiA teams that support findings of effective practice in these five areas are described below.

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

Seventeen campus teams in Year 3 investigated the impact of library instruction on first-year students' academic experience, adding assessment findings to a growing body of literature about the contributions of this instruction to students' learning in their initial coursework. Multiple aspects of library instruction were assessed, which adds richness to our understanding of student learning and success. Three projects, each of which investigated a different type of library instruction impact, are highlighted below.

- The [University of Texas at San Antonio](#) focused on the information literacy competence of incoming freshmen to determine how library-created instruction and online content might be used to target specific needs early in a student's academic career. A mixed-methods approach that included pretests (354 students) and posttests (226 students) and a rubric-based evaluation of 210 bibliographies showed that students improved their ability

field and higher education. It will address two primary questions—(1) What are the ways that library services align with and have impact on student learning and success? and (2) How can librarians communicate their alignment with and impact on student learning and success in a way that resonates with higher education stakeholders?—and recommend priority areas for action and for future research.

⁷ Effective practices in higher education are typically based on studies that exemplify variation in such attributes as setting, instructional design and approach, student characteristics, and institutional priorities. George Kuh, for example, identified high-impact educational practices, and, as the Association of American Colleges and Universities notes in its description of them, "The following teaching and learning practices have been widely tested and have been shown to be beneficial for college students from many backgrounds. These practices take many different forms, depending on learner characteristics and on institutional priorities and contexts." ("High-Impact Educational Practices: A Brief Overview," excerpt from George D. Kuh, *High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter* [Washington, DC: Association of American Colleges and Universities, 2008], <https://www.aacu.org/leap/hips>).

to recognize information literacy terms and criteria. Their level of competence with applying criteria correctly, however, revealed patterns of confusion. The librarians and course instructors are now collaborating on curriculum approaches and content that address the deficiencies identified by the assessment.

- At [St. Catherine University](#), the campus team investigated how the timing, frequency, and methods of information literacy instruction had an impact on the information literacy skills of first-term students. A pilot group of sixty-eight students had three sessions of library instruction at different points in the semester, and a control group of sixty-nine students participated in a one-shot instruction session. A pretest and posttest administered to all students and a rubric-based evaluation of a random sample of sixty-four student papers indicate that information literacy skills did increase. The instructional variables, however, did not significantly impact students' information literacy competence. The campus team attributed the lower-than-expected results to the possible influence of several uncontrolled external variables, including different student populations and variations in librarian and faculty teaching styles and levels of experience. The findings also suggest that students are still developing their information literacy competencies at the end of their first semester and library instruction should be provided beyond the first semester of coursework for students to adequately gain the proficiency necessary for academic success.
- At the [University of Massachusetts Boston](#), librarians taught over 580 library research instruction classes in the 2015–2016 academic year, making this time-intensive, but high priority, library effort an ideal area for inquiry by the AiA campus team. The team narrowed its focus to a study of the university's ENGL 102 course, which is designed to help students connect research to the writing process and to address skills needed to satisfy the institution's Writing Proficiency Requirement. To measure the impact of library research instruction on student learning, a pretest was administered to 281 students, 222 booklets that students completed in the class were evaluated using a rubric, and a posttest was administered to 250 students at the end of the semester. One of the key results of the study revealed that students understood and appreciated ways that they could use library resources to research topics and find credible sources. Based on these findings, which support the value of this library instruction, the library is expanding its focus to all English courses and piloting a new model that embeds research instruction throughout the course by breaking it into smaller chunks and encouraging faculty to assume greater responsibility for teaching more of the components themselves. As a result, more students enrolled in English courses benefit from library instruction and librarians' time in the classroom is reduced.

Some of the other factors considered by Year 3 campus teams that studied library instruction provided during students' first year of coursework include library use ([Brandeis University](#)), teaching methods ([Catawba College](#); [Hunter College](#), [City University of New York](#); and [Northeastern Illinois University](#)), specific student populations ([Northern Michigan University](#) and the [University of Illinois at Urbana-Champaign](#)), student dispositions ([University of Minnesota Duluth](#)), and collaboration with discipline faculty ([Elmhurst College](#)). The results of these projects further reinforce and strengthen project findings about this library impact area

from Year 1 (e.g., [Fairfield University](#), [Towson University](#), and [Virginia Polytechnic Institute and State University](#)) and Year 2 (e.g., [Joliet Junior College](#), [Our Lady of the Lake University](#), and [West Virginia State University](#)).

2. Library use increases student success.

AiA projects in the first and second years of the program documented connections between library use and student academic success (e.g., [Eastern Kentucky University](#), [Illinois Institute of Technology](#), [Murray State University](#), and [York University](#)). These projects investigated multiple library factors (e.g., database access, circulation, library instruction session participation, interlibrary loan, library visits, use of study rooms) in relation to student success as documented by such academic outcomes as GPAs, course grades, and persistence. A positive association between library use and student academic outcomes emerged from these projects. Assessment of library use was also the focus of some investigations in Year 3, as exemplified by the project at [California State University, East Bay](#).

- The AiA project at [California State University, East Bay](#) found that library use contributed to student success. The campus team aligned its project with university initiatives to increase the academic success of transfer students. The team’s assessment work was guided by its inquiry question, “Do course-integrated information literacy sessions positively affect a transfer student’s use of library resources and their California State University East Bay GPA?” The assessment findings indicate that library instruction did impact transfer students’ library use. Students who participated in course-integrated library instruction were much more likely to use library resources and were also more likely to have a higher GPA than students who did not receive the instruction. The findings also revealed that the library reaches only 10 percent of transfer students through course-integrated library instruction during their first year. To increase this percentage, the library will expand its instructional efforts with upper-division courses and develop additional resources for transfer students.

Using Library EZProxy, Circulation, and Institutional GPA data, the study found that new transfer students who received information literacy instruction were significantly more likely to use library resources and have a higher GPA.

- [California State University-East Bay](#)

Additional studies in the third year about library use were conducted at [Brandeis University](#), [Nevada State College](#), and the [University of Southern California](#). The AiA studies in this impact area have considered multiple library use factors to provide insights about different ways that library use may contribute to student academic success.

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

As libraries increasingly partner with other academic units on their campuses, assessment findings about the impact of collaborative approaches designed to increase student learning and

success are emerging. One of the four campus projects in Year 3 that investigated this area of library impact is highlighted below.

- To inform the [University of Miami](#)'s planning of its new Learning Commons, which will provide services to support students transitioning into the university environment, the AiA campus team decided to investigate lab sessions provided by the Intensive English Program through a pilot collaborative initiative between the campus libraries and the Writing Center. The team analyzed the bibliographies of student research papers and conducted interviews with students about their experiences with research and writing. Although the overall pool of students included in the study was small, some initial data about the pilot bridge programming was generated. In general, students reported that they felt supported through the program, and they used more library resources. More attention and instruction, however, need to address the skills of selecting and using appropriate sources in research writing. The AiA project was particularly useful in that the academic units identified successful collaborative practices for advancing the goals of the Learning Commons.

The results of these projects expand findings about collaborative initiatives from other Year 3 campus teams (i.e., [Drexel University](#), [Lincoln University](#), and [Seattle University](#)) and from AiA projects in previous years, including [Central Washington University](#), [Eastern Mennonite University](#), [Grand Valley State University](#), [Indiana University of Pennsylvania](#), and the [University of Nebraska at Omaha](#).

4. Information literacy instruction strengthens general education outcomes.

Several projects in the first two years of the AiA program studied the impact of information literacy instruction on students' achievement of institutional core competencies and general education outcomes. In Year 2, for example, the [Arkansas Tech University](#) AiA team documented positive associations between library instruction and students' critical thinking, and the campus team at [Temple University](#) found that students enrolled in one of the university's general education courses scored higher on the research paper rubric evaluation if they received library instruction than students who did not have library instruction. Projects completed in Year 1 also demonstrated positive connections between library instruction and general education outcomes, including investigations at [Illinois Central College](#), [Michigan Technological College](#), [Southern Connecticut State University](#), the [University of Idaho](#), and the [University of Redlands](#).

This area of investigation continued in Year 3, as exemplified by campus team projects completed at [Boston University](#) and the [University of Minnesota-Duluth](#), which are described below.

At [Boston University](#), a long-standing goal of the College of Arts and Sciences' Writing Program is the development of foundational skills and habits of mind of undergraduate students, which include research and information literacy. The AiA campus team saw possible connections between the comprehensive approach of ACRL's *Framework for Information Literacy in Higher Education* and the goals of the Writing Program. The team's guiding inquiry question was, "What impact can enhanced library engagement

based on the ACRL *Framework* have on information literacy knowledge, skills, and habits of mind in a university writing program?” The assessment focused on two frames from the ACRL *Framework*: (1) Research as Inquiry, and (2) Searching as Strategic Exploration. Using a rubric-based assessment and student reflections, the project findings documented that enhanced, expanded librarian engagement with students can increase students’ understanding and incorporation of the threshold concepts reflected in the two frames. In addition to these encouraging findings, the project led to further librarian/faculty collaboration, including creation of a co-led seminar for librarians and writing instructors on threshold concepts, information literacy, and collaboration.

[T]he project showed: 1) how librarian/faculty collaboration in the development of assignments and activities can inculcate information literacy habits of mind in students, and 2) how student portfolios and reflective essays can be used to assess the success of those efforts.

• [Boston University](#)

- The first-year writing course at the [University of Minnesota-Duluth](#) is designed to fulfill the institution’s information literacy learning outcome. Based on the librarians’ experiences working with students who frequently abandon their research efforts after a cursory search, the AiA campus team decided to focus on students’ ability to persist when conducting research in the course. By analyzing students’ dispositional changes throughout the research process and focusing on learners who persist, the project documented that library instruction is associated with an increase in behaviors and attitudes related to persistence and help-seeking. The library plans to build on the project’s findings to include a larger sample size and to expand collaboration with first-year writing instruction to develop student persistence in the research process.

The [College of DuPage](#), [Hawaii Pacific University](#), [John Carroll University](#), and the [State University of New York at Fredonia](#) also focused on institutional core competencies and general education in Year 3. Over the three years of the AiA program, the campus teams that studied library contributions to this academic priority have generated important findings about library impact on aspects of student learning and success.

5. Library research consultations boost student learning.

Research consultations are social encounters. They are ideal for encouraging the teaching and counseling roles of librarians. While librarians recognize that we often act as counselors at the desk or in a research consultation, it was surprising to discover that some students also see librarians in that role. When [students were] asked, “What did you find valuable in your one-on-one or group consultation with the reference librarian?” replies were not just about the discovery of library resources, or the newfound confidence in using them, but students also remarked on how useful librarians were in helping to motivate them.

• [Bentley University](#)

Building on the results of previous AiA projects that demonstrated a positive connection between library research consultations and students' academic achievement (e.g., [Dalhousie University](#), [Dakota State University](#), [Michigan State University](#), and [Wayne State University](#)), six institutions in Year 3 conducted assessment projects that studied this type of library service, with five institutions documenting a positive impact ([Boston University](#), [College of the Holy Cross](#), [Lincoln University](#), [Queensland University](#), and the [University of St. Thomas](#)) and the sixth institution establishing a methodology for collecting and analyzing data about the impact ([Southern Illinois University](#)). Overviews of two projects highlight approaches for assessing the impact of library research consultations, each focusing on a different student population.

- The [College of the Holy Cross's](#) year-long Montserrat seminar is required of all first-year students and is designed to develop foundational competencies that include critical thinking, writing, and communication. Given the emphasis placed on writing in the seminar and its continued importance throughout a student's academic experience at the college, the AiA project team crafted an inquiry question to address this priority: "Do Freshmen who engage in Personal Research Sessions (PRS) and library instruction sessions select more appropriate sources for their research?" Using a rubric to evaluate and score students' research papers, the assessment documented that PRS contributed to students' ability to identify and evaluate sources for relevancy. The team also learned that PRS did not seem to correspond to differences in students' understanding of when and how to cite sources properly. The library plans to contribute its findings to the current campus-wide assessment of the Montserrat program and to expand its investigation of other research and instruction with upper-class programs.
- To align with [Queensland University of Technology's](#) institutional priority on student success and retention, the AiA campus team investigated the contributions of the library's Academic Skills Adviser (ASA) consultation services to this institutional effort. The team analyzed the GPAs of students who were experiencing significant academic challenges and were referred to the ASA services. The study's findings indicate that those students who attended an ASA consultation achieved higher academic success than students who were referred to the ASA services but did not attend a consultation.

This project enabled us to set up a process that combines data from disparate systems to create meaningful reports that will allow us to monitor and measure the impact of our services and investigate opportunities for program improvement.

- [Queensland University of Technology](#)

The growing evidence from AiA projects about positive connections between library research consultations and student academic success demonstrates an area of effective library practice.

Promising Evidence of Library Impact

The AiA projects continue to build evidence of library impact in other areas as well. Assessment of library impact in these areas, however, tends not to have been investigated as extensively as in those noted in the previous section, or the findings may not be as consistently strong. The previous five areas are based on evidence of effectiveness, as demonstrated by effective practices, and all academic libraries should strive to grow and strengthen programs, services, and resources in those areas. The four areas discussed in this section point to evidence of promise. The growing number of studies in these four areas in particular contribute to investigations that yield promising results about positive connections between the library and students' academic success.

1. The library contributes to improved student retention.

The priority given to retention and persistence on most higher education campuses has resulted in several AiA projects that focused on library contributions to this academic outcome. In Year 3, for example, six AiA institutions investigated retention and persistence in relation to library instructional services and student use of library collections. Campus teams considered multiple factors, including library use ([Nevada State College](#)), information literacy instruction ([Northern Michigan University](#)) and library research consultations ([Queensland University of Technology](#) and [Southern Illinois University](#)). Students' online library use and its impact on academic success was the focus of the [Nevada State College](#)'s AiA team's assessment project, as described below.

- As [Nevada State College](#) increasingly emphasizes the importance of using evidence to inform academic decision making, the AiA campus team saw an opportunity to investigate the connection between online library use and student success as demonstrated by semester GPAs, one-term retention, and good academic standing. Various data points (e.g., student demographics, student success data, and library use measured by EZProxy sessions) were analyzed for possible relationships. The project data documented a positive connection to all three types of academic outcomes. To generate data that refines and adds to the institution's understanding of this connection, plans are underway to investigate the relationship between the use of library services and assignment-level success measures.

Twelve projects in Year 1 and eleven projects in Year 2 also examined this academic outcome. Even though the complexity of factors and influences that may affect students' progress from one semester to the next or their persistence toward degree completion is considerable and determining reliable methods for assessing such progress is challenging, the results of several AiA projects show promising associations of the library to retention and persistence, including Year 1 projects at [Arizona State University](#), [Dalhousie University](#), and [Murray State University](#), and Year 2 projects at [Eastern Mennonite University](#), [Michigan State University](#), [NorthWest Arkansas Community College](#), and the [University of Mississippi Medical Center](#).

2. Library instruction adds value to a student's long-term academic experience.

At most higher education institutions, a significant portion of library instruction time, effort, and resources is directed toward freshmen students, largely because required first-year courses are important opportunities to teach a common, foundational set of information literacy competencies that these students will use throughout their academic studies. The high number of AiA projects that consider the impact of library instruction on freshman academic achievement reflects this interest and importance. A growing number of libraries are considering the information literacy competencies of students beyond the freshman year. Some AiA studies have examined the impact of first-year instruction as students move through their coursework, while others have studied the contributions of library instruction to the sophomore, junior, or senior academic experience. Two assessment studies conducted during the third year of the AiA program, which are described below, also investigated the impact of library instruction offered after the first year of college or university study. The project at [Bentley University](#) focused on business degree students, and [Georgetown University](#)'s study considered graduate students. Both institutions saw positive contributions of the library.

- Students enrolled in [Bentley University](#)'s Integrated Business Project (IBP) course apply research methods in their study of real-world business problems. The AiA team investigated the impact of library research consultations on students' learning in one section of the course (7.5 percent of students enrolled in IBP course sections). Survey results of students' experiences indicate a 36 percent increase in students' level of confidence when applying research methods after consulting with reference librarians.
- [Georgetown University](#) studied the connection between library-instructional interventions (e.g., research instruction, web-based tutorials, and research consultations) provided to graduate students and the applicability and transferability of the skills to workplace situations. These skills include the ability to identify, synthesize, and communicate information from relevant sources and to propose solutions to industry and work-based problems. Students who participated in library intervention reported a positive impact of the instruction on their research skills confidence (87 percent) and indicated that the skills taught were "very" applicable (55 percent) or "quite a bit" applicable (27 percent) to current or future workplace settings.

The study's findings suggest that research libraries are a critical partner and tool for students to advance their workplace information fluency.

- [Georgetown University](#)

Studies in Year 3 at [Drexel University](#), the [University of North Carolina-Greensboro](#), and the [University of Wyoming](#) also add to this multifaceted area of assessment activity and build on the work of Year 1 projects (e.g., [Anne Arundel Community College](#) and [Lasell College](#)) and Year 2 projects (e.g., [Champlain College](#), the [University of Minnesota-Morris](#), and the [University of South Dakota](#)).

3. The library promotes academic rapport and student engagement.

When students feel a sense of belonging and connectedness to a campus, learning is enhanced and academic success is more likely. Their academic engagement, motivation, and general enjoyment of courses and learning typically increase with academic rapport. In each of the three years of the AiA program, campus teams considered the unique role that the library may play in a student's sense of academic rapport. At the [University of Alberta](#), for example, the library initiated PLAS: Personal Librarian for Aboriginal Students, and an assessment of its effectiveness by the campus team in Year 2 found that in addition to encouraging students to visit the library, use its services, and make better use of the services and programs, PLAS "created a positive environment for their learning and research, and helped demystify the library and lessened their anxiety toward it" (University of Alberta team). In the first year of the AiA program, [Montana State University](#) documented a positive connection between the library's social media initiatives and students' sense of community.

In Year 3, [Seattle University](#)'s AiA team focused on this academic outcome in its study of transfer students.

- Early in the university's first quarter, the Library and Learning Commons staff members e-mail transfer students to introduce themselves and describe various services. To increase a sense of personalization and engagement, the e-mails also include a short video introduction and information about two welcome events. The AiA campus team assessed impact of this communication on students' academic experience. The survey findings indicate that students (57 percent) found the video helpful, and those students who attended the welcome event indicated that the event made them "more likely to use one or more of the library and learning commons services." In fact, the student respondents recommended increasing the social, interactive, and personalized aspects of the library program and to include more information about the library and its staff during the Transfer Orientation activities.

Academic rapport and intimacy encompass multiple attributes, and the AiA projects exemplify different ways that these various factors can be investigated to assess the library's contribution to students' sense of connection with their institution.

4. Use of library space relates positively to student learning and success.

Several AiA campus teams have investigated students' use of library space and its connection to their learning and success. Numerous aspects of this impact area were studied in the first two years of the AiA program, including the location of service points in relation to student learning (e.g., [Eastern Mennonite University](#)), the role of space in fostering academic and social community (e.g., [University of Manitoba](#), [University of Mississippi Medical Center](#), and [Wake Forest University](#)), and students' use of library space and its connection to student success (e.g., [University of Northern Colorado](#)). An assessment project conducted during Year 3 at [Davidson College](#) studied how reconfiguring library space might improve students' academic experience.

- Co-curricular experiences that extend learning beyond the classroom and include leadership, service-learning, community-engagement, and entrepreneurship activities are given a high priority at [Davidson College](#). The AiA project team used surveys and focus groups to generate data that compared the library's impact on students involved in co-curricular programs with their peers. Co-curricular students ranked aspects of the library, such as space/comfort, services, and collections, as more important than their peers. However, they were less satisfied with space than were their peers. The AiA librarian at Davidson College explains how the findings inform decision making about library space and services: "By focusing on themes that emerged in the project's focus groups, the Davidson College Library will create an agenda for agile development of the library space and service—subsequent improvements will be assessed, revised, and reassessed. These recursive changes should maximize Library impact on co-curricular students, and may also be relevant to the student body as a whole."

Additional projects in the third year of the AiA program that investigated library space as an impact factor considered student engagement ([University of Iowa](#)), student use of space ([University of Kansas](#)), and the library as a place for research and scholarly collaboration ([Lincoln University](#)).

Advancing Library Leadership through Action Research

In each of the three years of the AiA program, the librarians commented in their project and reflective reports that their leadership competence increased through the professional development and assessment activities that merged research with practice. The action research framework, which emphasized improving practice through systematic investigation of a question grounded in institution context, engaged the librarians in an immersive process of ongoing interaction with one another and collaboration with their team members. The librarians led the design and implementation of assessment that related directly to their campus's academic priorities, creating opportunities for substantive conversations with campus stakeholders about student learning and resulting in meaningful findings that informed decision making about library programs and practices. The leadership qualities that were strengthened through this process include an awareness of the importance of inquiry and decision making grounded in institutional context, understanding and experience with the dynamic nature of assessment, and a recognition of the personal and professional growth that emerges through collaboration with others. These qualities also reflect key elements of an action research approach.

Understanding of Institutional Context

The librarians led their campus team through an assessment project that focused on a question aligned with their institution's mission and priorities and that had shared interest among the team members. The projects also integrated research with practice, which means that the design and implementation of the projects had strong connections to the ongoing work of the librarians and campus constituents. As a result, the assessment activities were situated in everyday practice, giving context and real-world relevance to the work. A sense of personal responsibility and ownership for the assessment process was fostered because the results led to practical knowledge that had significance and consequences for the librarians and their professional practice.

Through their work on the AiA projects, the librarians frequently expanded their participation in institutional assessment activities. Because the team-based approach to assessment prompted discussion about how different campus units interact and influence student learning, one project completed by one unit wasn't enough. The collaborative process often generated campus-wide synergy around assessment.

The main take away from our involvement with AiA has been assessing what we value, not just valuing what we assess. We understand now that the context matters and librarians need to pay close attention to institutional values and how can we add value to them.

- AiA librarian, reflective report

Facilitating the Dynamic Nature of Assessment

The librarians developed leadership skills that anticipated and were responsive to the dynamic nature of organizational cultures and practices. The team-based approach required collaboration throughout the assessment design, implementation, and analysis phases, a process that was iterative and generative as discussions took place. Important conversations occurred as team members shared their perspectives on student learning and considered how different departments and campus units contribute to enhancing a student's experience at the institution. Critical dialogue was needed to reach common understanding about different aspects of the project, including agreed-upon definitions of learning characteristics and attributes of academic success, and consensus about meaningful measures of these attributes. For example, what are acceptable measures of academic rapport? Or how are we defining "at risk" students? It's a dynamic, developmental process.

The discussions regarding exactly what information literacy is and how it relates to a student's skill set were particularly revealing....Conversations about how to increase critical thinking and information literacy brought to light the challenge of creating useful surveys.

- AiA librarian, reflective report

An action research framework also anticipates the dynamic nature of assessment and acknowledges the likelihood that adjustments to the process will occur as it unfolds. For many librarians, leadership was required to navigate multiple tasks and dimensions of the project as it changed over the fourteen-month process. Even mistakes provided opportunities to learn and improve.

Having gone through the process of the AiA project, I am better versed at planning out assessment projects. I have a stronger base of experience to refer to when creating a research question and gathering meaningful data. I also feel that the process of failure and reaching dead-ends in my AiA project helped me become more creative in using failure to create knowledge. I realize that data cannot tell the whole story, which helps me understand the type of questions I can ask that could reasonably answered in a data project.

• AiA librarian, reflective report

Since the projects were designed to inform decision making and to improve programs and practices, the likelihood of change was built into the process. Change by its very nature is dynamic and fluid. Through the professional development and project activities, the librarians learned to negotiate and navigate this evolving and often ambiguous process.

Embracing Professional and Personal Growth

As the librarians led their campus teams, they honed their leadership skills and recognized significant growth at a personal and professional level. The librarians positioned themselves as contributing members of the broader campus environment, and they saw their influence on the academic work of the institution. Their knowledge of and experience with assessment led to recognition by others, and, in the process, the library's value on campus was enhanced. At several institutions, the AiA librarians moved into new leadership roles in the library and on campus that required a broader set of leadership competencies.

Leading a team-based assessment project also increased the librarians' competence with proposing action steps based on evidence and implementing changes in library services and practices. As they made decisions based on project findings, they expanded their capacity to lead and initiate change.

One of the most important things I learned was that people on campus really do want to work with librarians. Honestly, I was a bit cynical about faculty perceptions of librarians, and worried that folks on campus might not be willing to take on a project of this scale with me. Everyone I invited to the campus team was excited to be part of the project, and excited to work with me. This gave me a lot of confidence, and makes me excited to form more partnerships in the future.... I'm also much more comfortable with assessment work, and in fact advocated for assessment to be a larger part of my role. It's now part of my job title!

• AiA librarian, reflective report

Communication skills as demonstrated by facilitation, collaboration, and presentations were also strengthened through the project activities. Over the fourteen months, the librarians facilitated a group process that required communication of a shared vision and delegation of a procedure for

carrying out the assessment. The facilitation also necessitated an understanding of interpersonal communication and collaboration to move the project forward. Once the project findings were completed, the librarians considered the various campus constituent groups that would benefit from learning about the results, and they initiated conversations and delivered presentations to communicate the project outcomes and propose evidence-based actions.

Conclusion

A strong community of practice around academic library assessment has emerged through the AiA program and continues to develop. During each year of the program, the librarians were involved in a collective learning experience that encouraged sharing ideas and providing critical feedback about their assessment work. The process also fostered networking among the librarians, which has been sustained beyond the AiA activities. Many of the librarians have presented about their assessment experience and ongoing work at conferences, written journal articles, or prepared book chapters, as documented by the growing [Assessment in Action Bibliography](#).⁸

I felt a part of a community of practice, thrust into a unique experience, all trying to find our way and learning from one another.

- AiA librarian, reflective report

The results of over 200 AiA campus team projects document positive library impact in several important areas related to students' academic experiences. The projects also demonstrate how academic librarians can engage institutional constituent groups and lead assessment initiatives. In the process, they have increased awareness about library contributions to student learning and success on their campuses and within the wider postsecondary education community.

⁸ "Assessment in Action Bibliography," ACRL Value of Academic Libraries website, accessed April 10, 2017, http://www.acrl.ala.org/value/?page_id=980.