Program Evaluation Report:

Cohort 1

Prepared by

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Institute of Museum and Library Services *Laura Bush 21st Century Librarian Program*
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Program Overview

CARLI Counts: Analytics and Advocacy for Service Development is a three-year continuing education library leadership immersion program that prepares librarians to make effective use of research findings on the impact of academic libraries on student success for the twin purposes of service development and library advocacy. The Consortium of Academic and Research Libraries in Illinois (CARLI) received an Institute of Museum and Library Services (IMLS), Laura Bush 21st Century Librarian Program grant to fund the project and is working in partnership with the University of Illinois Library at Urbana-Champaign and Lewis & Clark Community College.

The program, which began October 1, 2018, features two cohorts, Cohort 1 in calendar year 2019, and Cohort 2 in calendar year 2020. Cohort 1 had 38 participants and 8 mentors. The cohorts are divided into teams of approximately five participants, each with one mentor for a total of six people on each team. Program participants learn how to use local library data analytics in alignment with institutional data, goals, and strategic priorities to improve their services and demonstrate their value. CARLI Counts deliverables will include a portfolio of local case studies, an evaluation of the collective statewide impact of those cases, and a replicable state/regional training model for equipping librarians to be campus leaders in assessing library impact on student learning and success, all of which will be made openly available on the CARLI website.

In addition to online project support, webinars, and team work, two in-person workshops for the CARLI Counts Cohort 1 participants and mentors were held in Champaign, Illinois, on February 19-21, 2019 and July 15-17, 2019. The workshops provided an opportunity to learn about evidence-based library practices, develop a campus project, and foster team building. Short presentations, small group discussions and activities, and individual learning application exercises covered library assessment, action research design and methods, sources for data, data ethics and privacy, library leadership, and advocacy.

Types of Institutions Represented in Cohort 1[1]	
Community College (public)	15
Public University	7
Private (four-year and graduate) College/University	26

The project staff included academic librarians, library and information sciences faculty, doctoral and MLIS students, and CARLI staff.

[1] CARLI total membership consists of 128 libraries: 39 community colleges, 13 public universities, and 76 private colleges and universities/special libraries.

- Taylor Anderson, Graduate Assistant for CARLI Counts
- Karen Brown, Grant Evaluator, Professor, Dominican University School of Information Studies
- Deborah Campbell, Program Sustainability for CARLI Counts, Library Services Coordinator, CARLI
- Anne Craig, Principal Investigator, Senior Director, CARLI
- Michelle Haake, Administrative Support for CARLI Counts, CARLI
- Lisa Hinchliffe, Co-Principal Investigator, Professor, University of Illinois at Urbana-Champaign Library
- Dennis Krieb, Curriculum Advisor, Director of Institutional Research & Library Services, Lewis & Clark Community College
- Beck Tench, Speaker and Team/Mentor Coach, University of Washington

Program Evaluation

The CARLI Counts program evaluation is designed to assess participants' understanding and use of evidence-based library practices, the impact of the projects at their institutions, the team-based professional development, and the collective statewide impact of the program.

Multiple means of evaluation were conducted throughout Year 1 of the program, including:

- Advisory Board review and feedback of the curriculum learning outcomes, instructional materials, learning activities, learner interaction, and course technology.
- Program participants completion of three online surveys – preliminary, midpoint, and post program – about their understanding and use of evidence-based library practices, the effectiveness of the professional development, and their learning experience.
- Program participants completion of rapid evaluations each day during the in-person professional development sessions to identify learning gains, concerns, and questions.
- Review of project reports completed by participants to identify focus areas and data collection methodologies of evidence-based investigations, involvement of campus stakeholders, impact of project findings on library service, and leadership development.[2]
- One-on-one interviews with Cohort 1 mentors to learn about their initial motivations and expectations, understand their experiences as a CARLI Counts mentor (i.e., successes, challenges, professional and personal growth), and identify potential training and resources for the Cohort 2 mentors.

[2] Individual project reports can be found on the CARLI website at: https://www.carli.illinois.edu/products-services/prof-devel/carli-counts/cohort1.

The findings of these evaluations have been used by the program leadership to address identified learning needs, build the professional development content and activities, and provide support to the program participants.

This report is based primarily on the Cohort 1 Post-Program Survey results and the participants' Project Reports. Additional data from other reports are included as appropriate.[3]

[3] Preliminary Survey-41 respondents (38 participants as of July 2019; 41 reflects 1 new participant who joined the program and 2 who left the program before July 2019); Post-Workshop 1 Survey-31 respondents; Post-Program Survey-26 respondents; 33 Project Reports.

Understanding and Using Evidence-Based Library Practices

Key Findings

1. Participants' self-reported understanding of 13 evidence-based practices increased over the span of the one-year program as indicated by the three online surveys.

   The growth in understanding of the evidence-based practices is indicated by a response of *Agree* or *Strongly Agree* to the statement, *I have a basic understanding of the following aspects of evidence-based library practices.*

   - Identifying campus priorities (from 83% to 91% to 100%)
   - Connecting campus priorities to library services and programs (from 73% to 93% to 97%)
   - Identifying research variables (from 24% to 84% to 74%)
   - Measuring research variables (from 19% to 74% to 87%)
   - Difference between quantitative and qualitative methods of data collection and analysis (from 68% to 93% to 92%)
   - Identifying data needs (from 47% to 81% to 100%)
   - Determining sources of data (from 53% to 81% to 100%)
   - Determining data collection method(s) (from 39% to 71% to 85%)
   - Collecting data (from 47% to 71% to 92%)
   - Analyzing and interpreting data (from 36% to 52% to 80%)
   - Communicating research/assessment findings to campus stakeholders (from 46% to 71% 77%)
   - IRB/human subjects requirements (from 44% to 74% to 93%)
   - Data ethics and privacy (from 63% to 81% to 88%)

2. Participants reported that they are likely to increase their use of evidence-based practices at their libraries as a result of CARLI Counts.

   The Post-Program Survey indicated a strong likelihood of using the following five evidence-based library practices as reflected by an *Agree* or *Strongly Agree* response to *As a result of CARLI Counts, I will/my library will likely increase . . .*

   - *. . . my contribution to reports at my institution that use data to connect library services to students learning and success.* (88%)
   - *. . . my use of research or assessment findings about the impact of libraries on student learning and success to improve services and programs.* (81%)
   - *. . . my use of local, institutional data to align my work in the library with my institution's goals and strategic priorities.* (81%)
   - *. . . its collection of data about the impact of our services on student learning and success.* (54%)
   - *. . . my use of research or assessment findings about the impact of libraries on student success to develop strategies for library advocacy.* (54%)

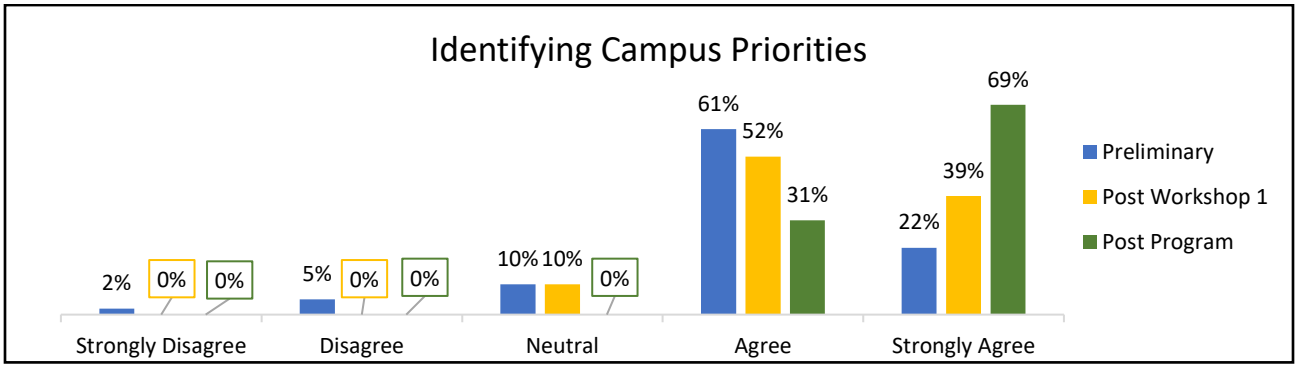
3. There is a notable positive change in participants' use of evidence-based practices from before CARLI Counts and to their likelihood of using evidence-based practices after CARLI Counts, as reflected by responses on the Preliminary Survey and the Post-Program Service.

   On the Preliminary Survey, participants indicated their current use of specific evidence-based practices on a five-item rating scale from *Never* to *Frequently*. On the Post-Program Survey, participants indicated their likelihood of using specific evidence-based practices on a five-item rating scale from *Strongly Disagree* to *Strongly Agree*.

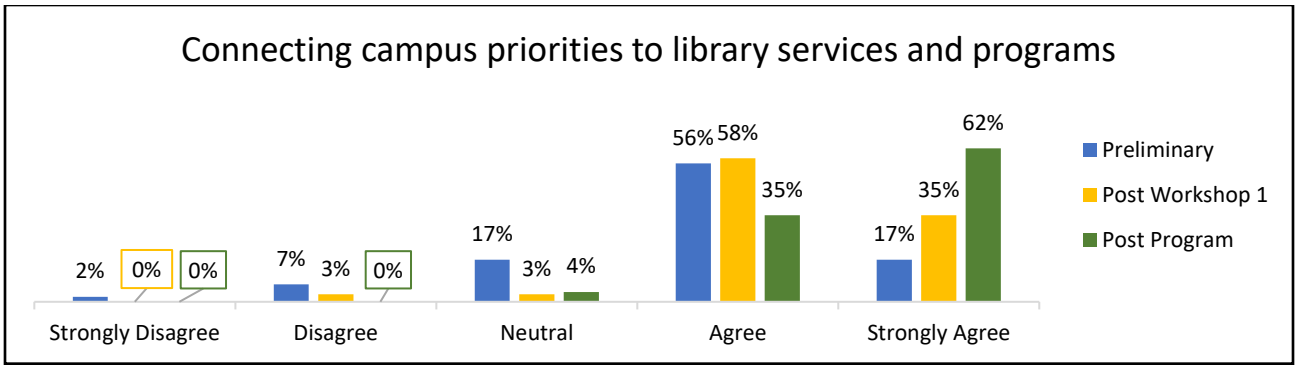
   - Use of research or assessment findings about the impact of libraries on student success to improve library services and programs. (from 20% to 81%)
   - Library's collection of data about the impact of services on student learning and success. (from 24% to 54%)
   - Use of learner analytics to understand student learning. (from 7% to 46%)
   - Use of logic models for program and service planning, implementation, and assessment. (from 2% to 39%)
   - Use of local, institutional data to align the library with institutional goals and strategic priorities. (from 52% to 81%)
   - Use of research or assessment findings about the impact of libraries on student success to develop strategies for library advocacy. (from 20% to 54%)
   - Contribute data to institutional reports about the connection of library services to student learning and success. (from 17% to 88%)

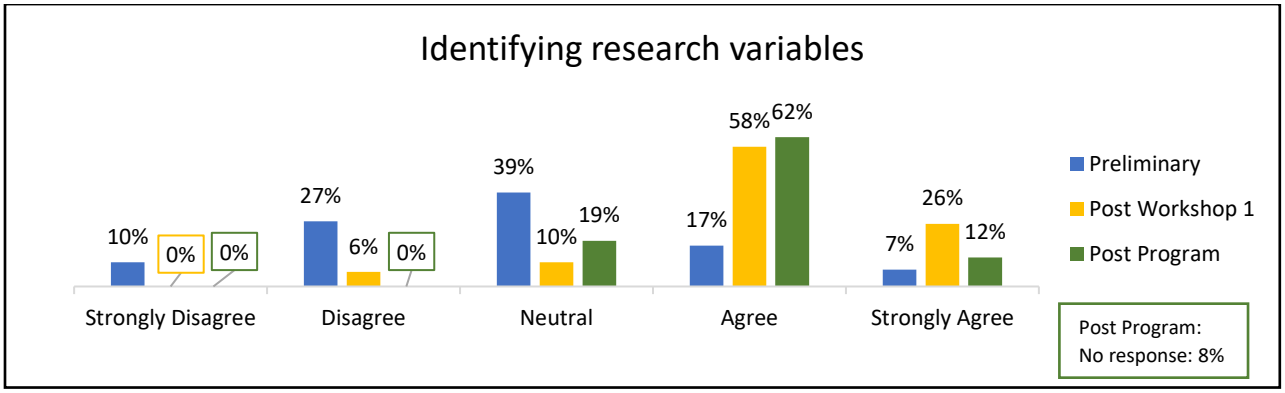
Responses on Surveys[4]

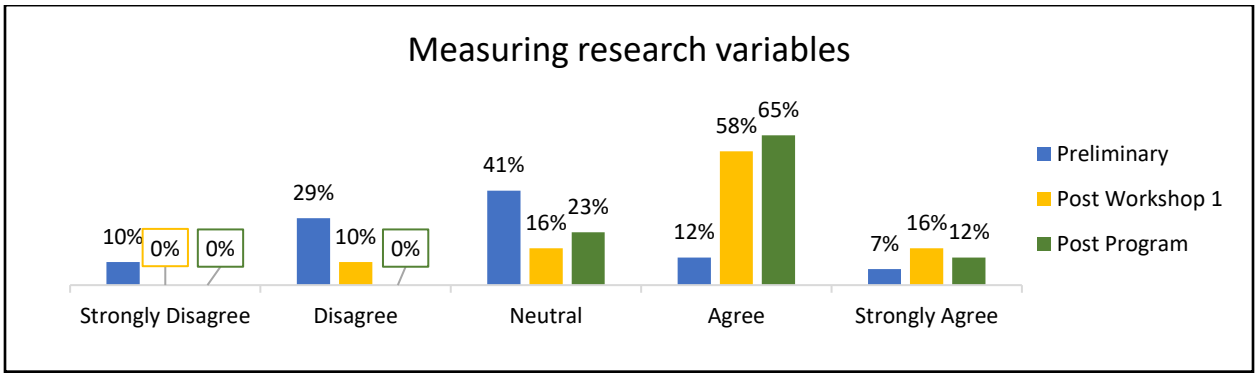
I have a basic understanding of the following aspects of evidence-based library practice:

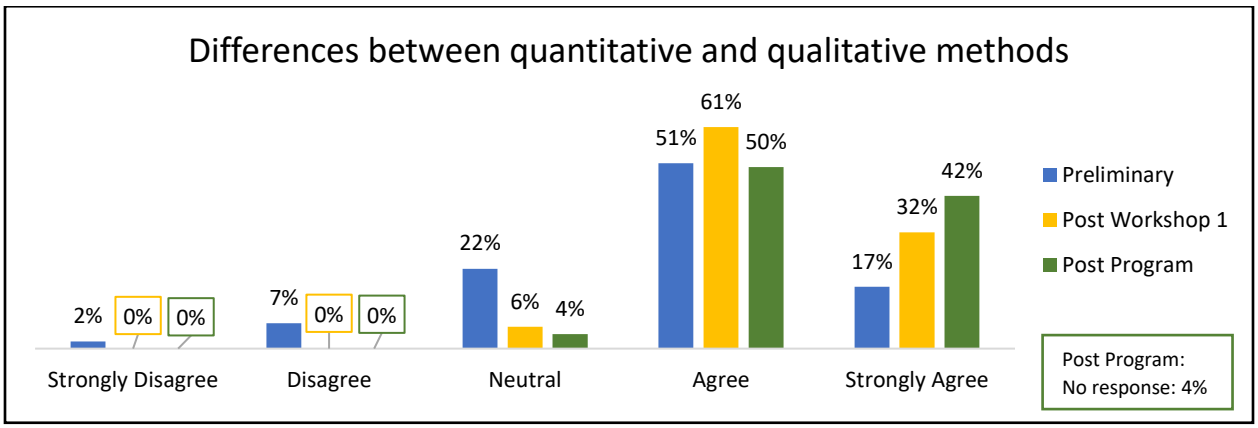


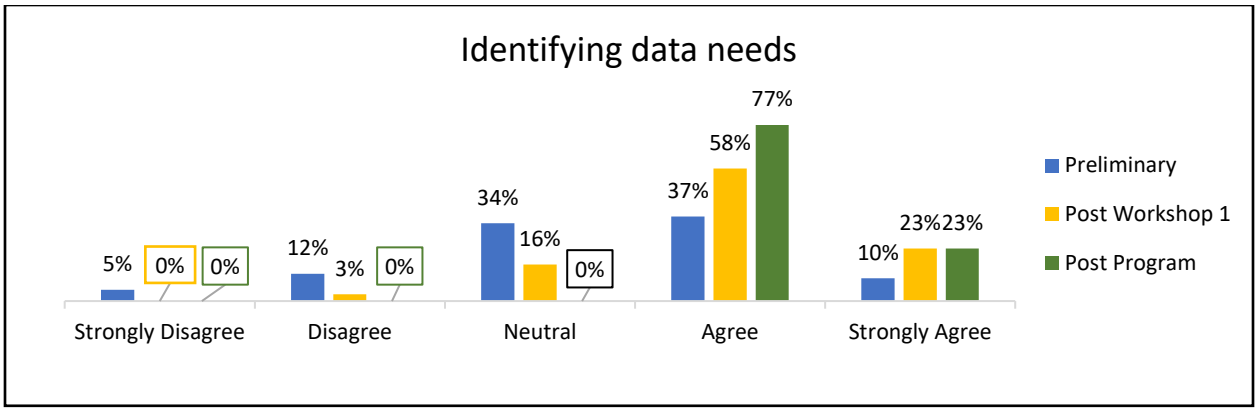
[4] Minor typing and grammatical errors have been corrected in the excerpts from the survey responses and project reports.

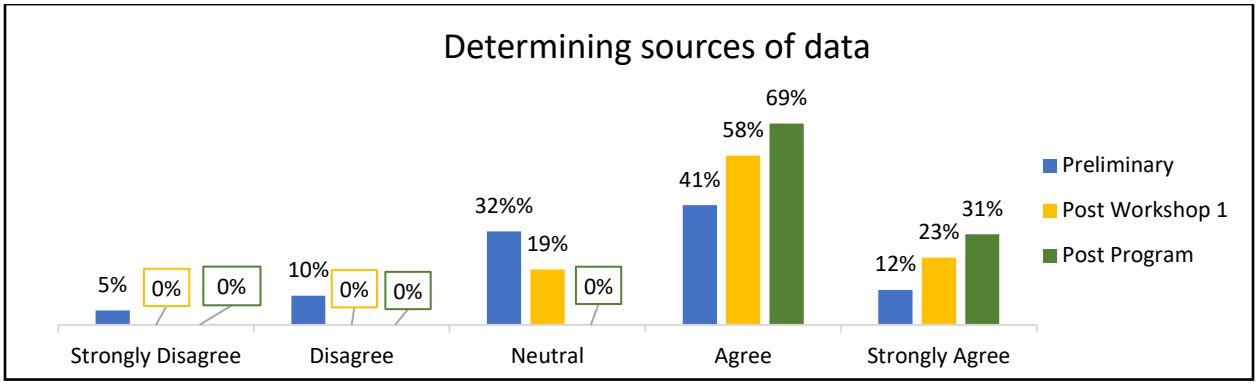

Connecting campus priorities to library services and programs
2%
0%
0%
7%
3%
0%
17%
3%
4%
56%
58%
35%
17%
35%
62%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program

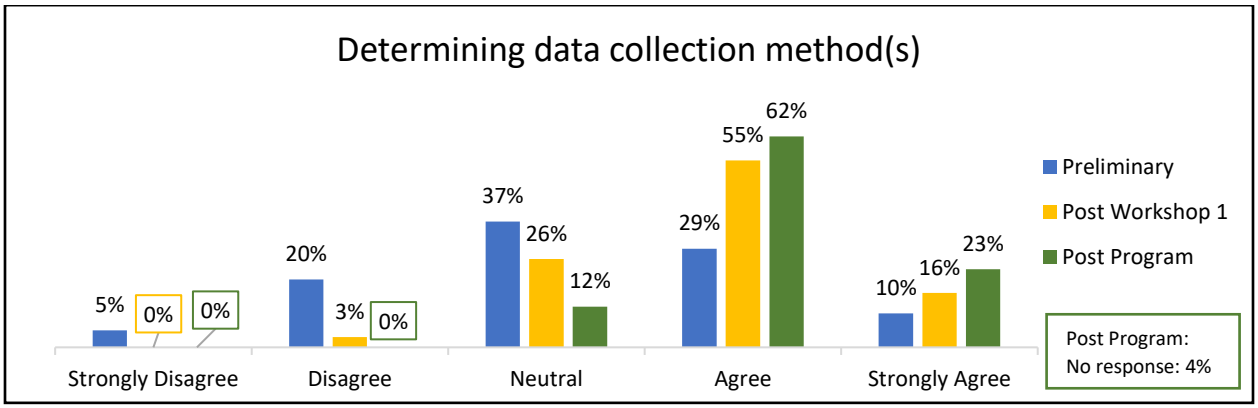

Identifying research variables
10%
0%
0%
27%
6%
0%
39%
10%
19%
17%
58%
62%
7%
26%
12%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program
Post Program:
No response: 8%

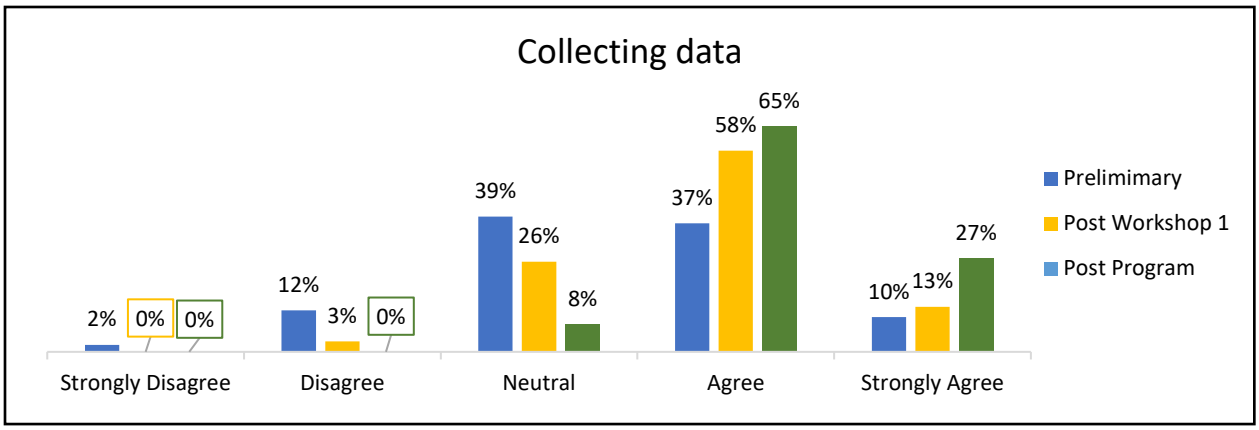

Measuring research variables
10%
0%
0%
29%
10%
0%
41%
16%
23%
12%
58%
65%
7%
16%
12%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program

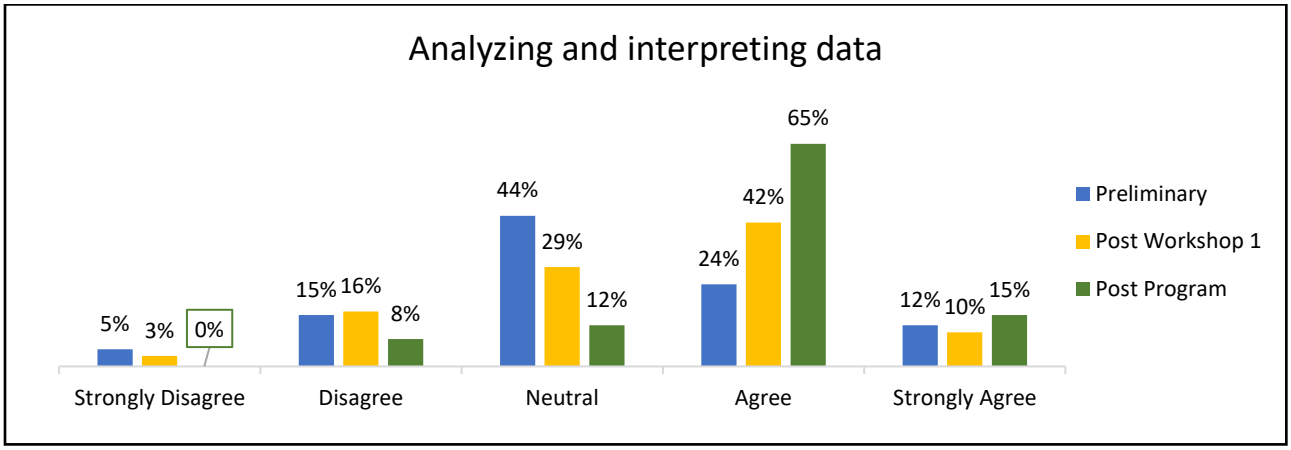

Differences between quantitative and qualitative methods
2%
0%
0%
7%
0%
0%
22%
6%
4%
51%
61%
50%
17%
32%
42%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program
Post Program:
No response: 4%

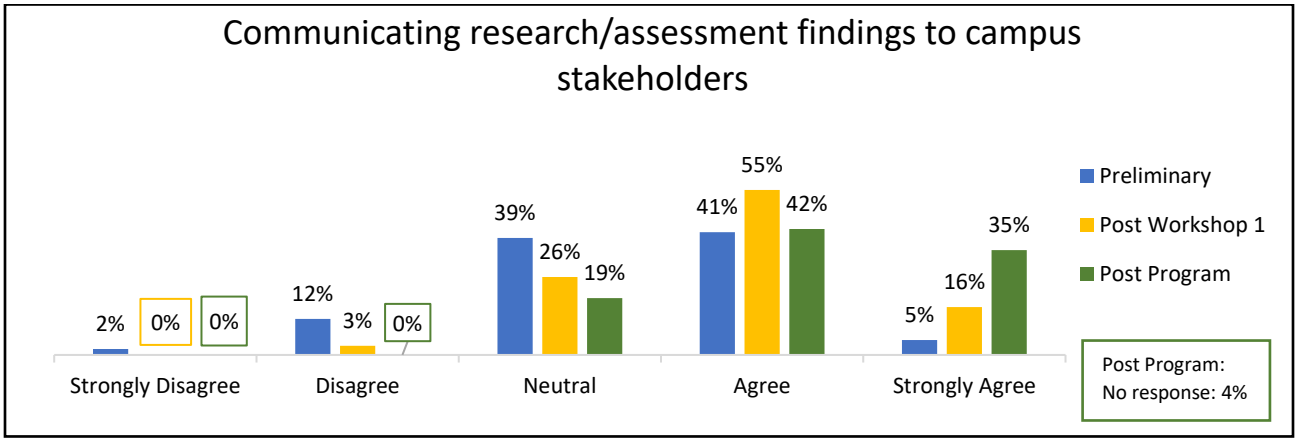

Identifying data needs
5%
0%
0%
12%
3%
0%
34%
16%
0%
37%
58%
77%
10%
23%
23%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program

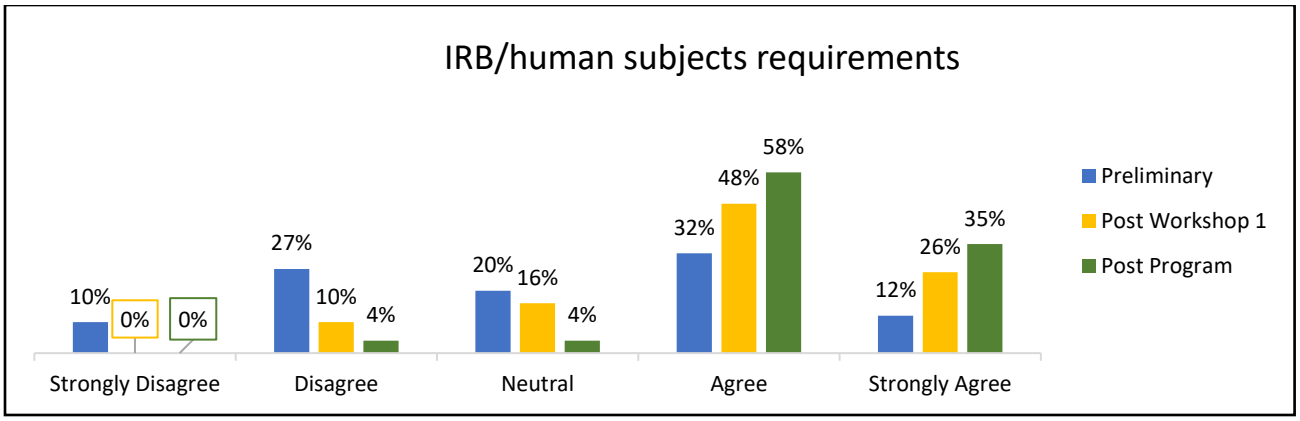

Determining sources of data
5%
0%
0%
10%
0%
0%
32%%
19%
0%
41%
58%
69%
12%
23%
31%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program

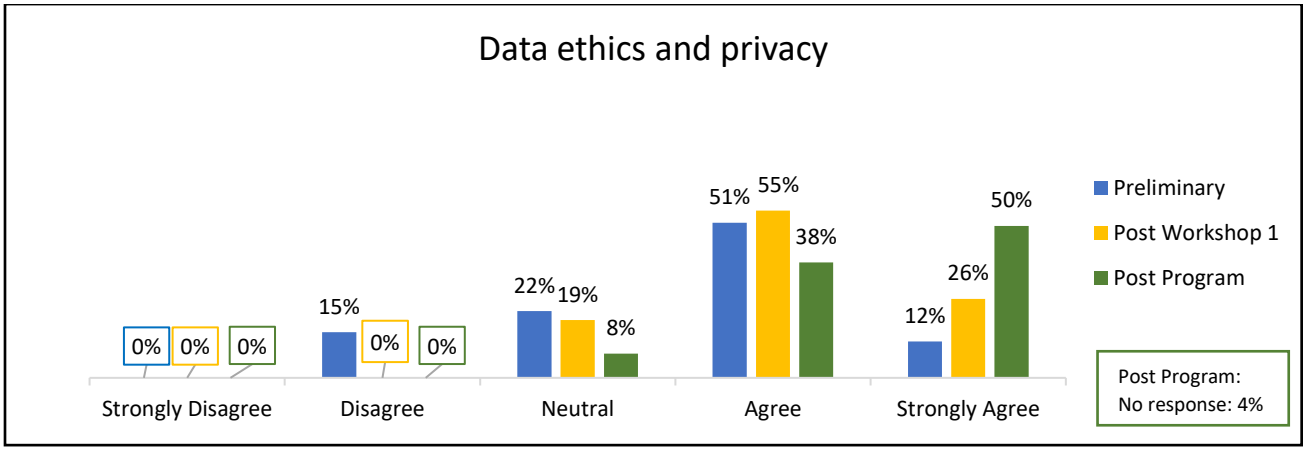

Determining data collection method(s)
5%
0%
0%
20%
3%
0%
37%
26%
12%
29%
55%
62%
10%
16%
23%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program
Post Program:
No response: 4%


Collecting data
2%
0%
0%
12%
3%
0%
39%
26%
8%
37%
58%
65%
10%
13%
27%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Prelimimary
Post Workshop 1
Post Program

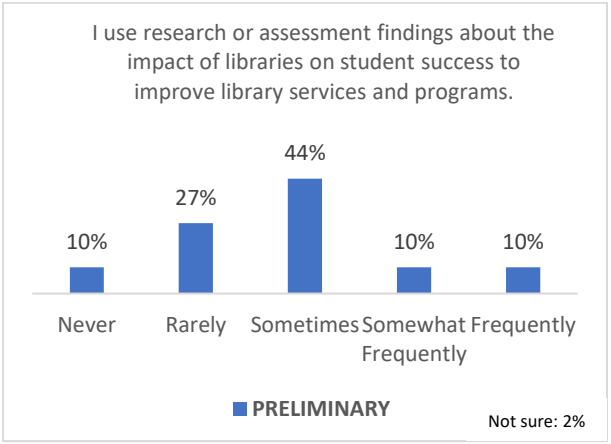

Analyzing and interpreting data
5%
3%
0%
15%
16%
8%
44%
29%
12%
24%
42%
65%
12%
10%
15%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program


Communicating research/assessment findings to campus stakeholders
2%
0%
0%
12%
3%
0%
39%
26%
19%
41%
55%
42%
5%
16%
35%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Preliminary
Post Workshop 1
Post Program
Post Program:
No response: 4%

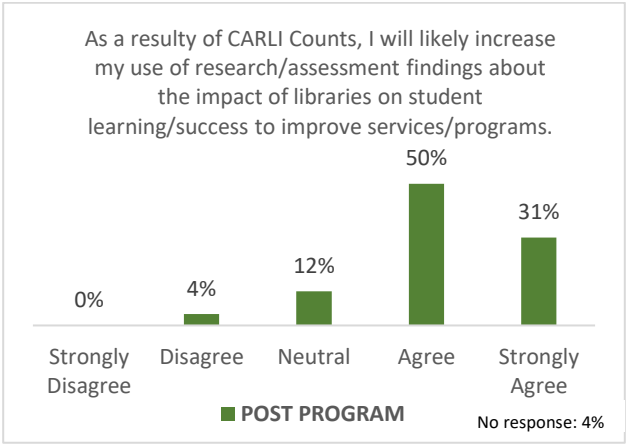


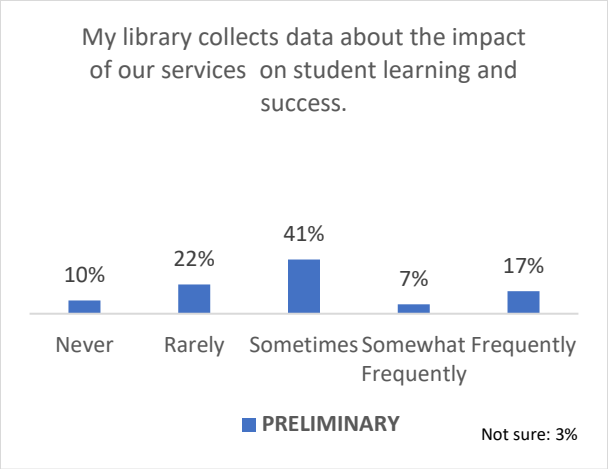


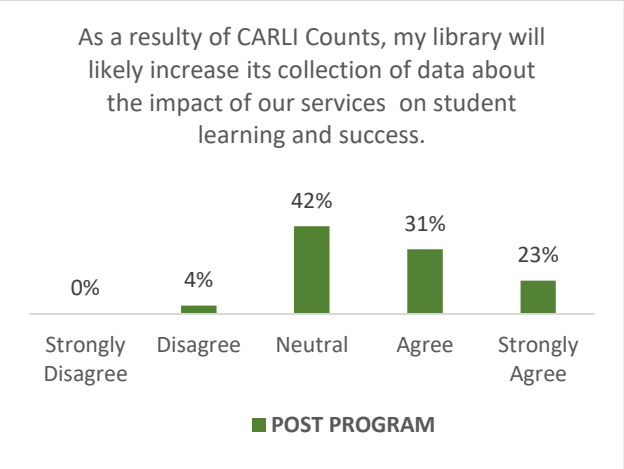
I use/my library uses . . .

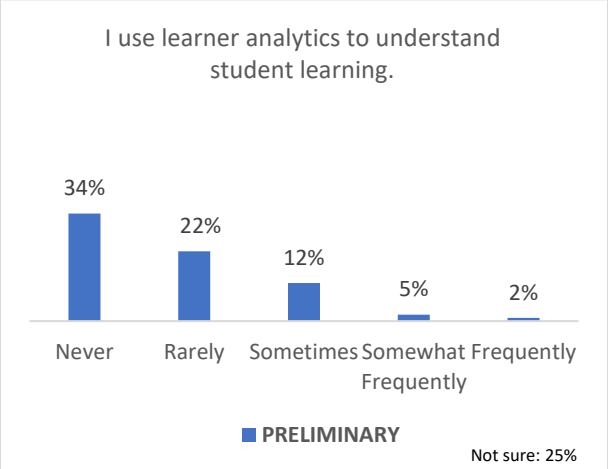


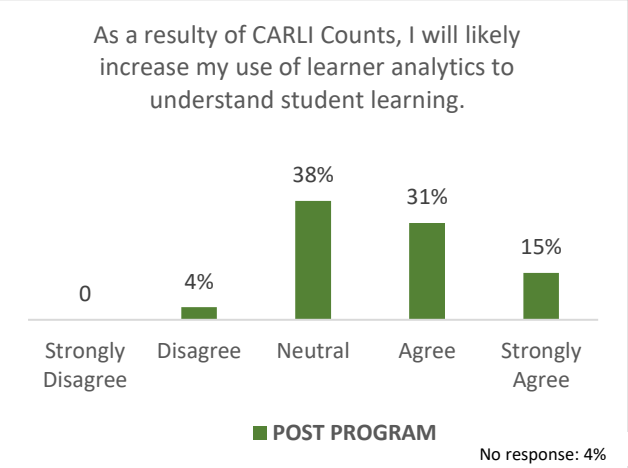
As a result of CARLI Counts, I will/my library will likely increase . . .

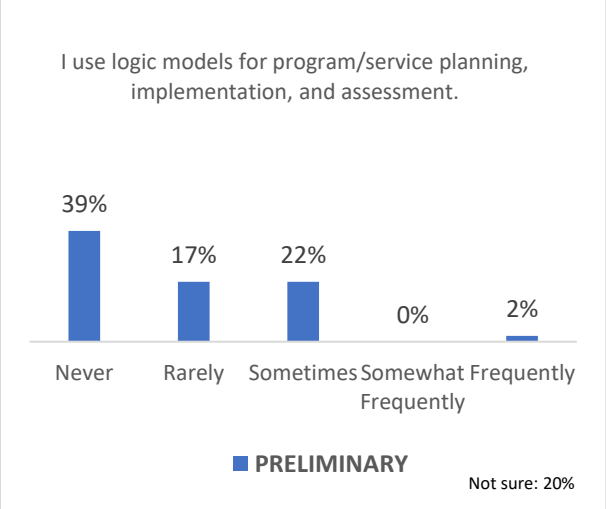


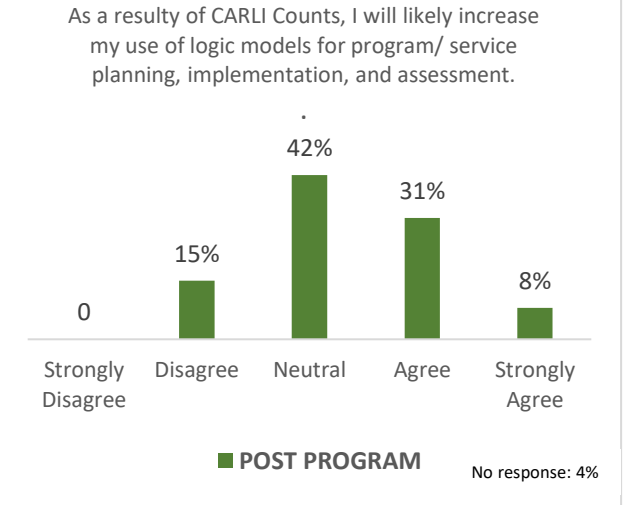

My library collects data about the impact of our services on student learning and success.
10%
22%
41%
7%
17%
Never
Rarely
Sometimes
Somewhat Frequently
Frequently
PRELIMINARY
Not sure: 3%

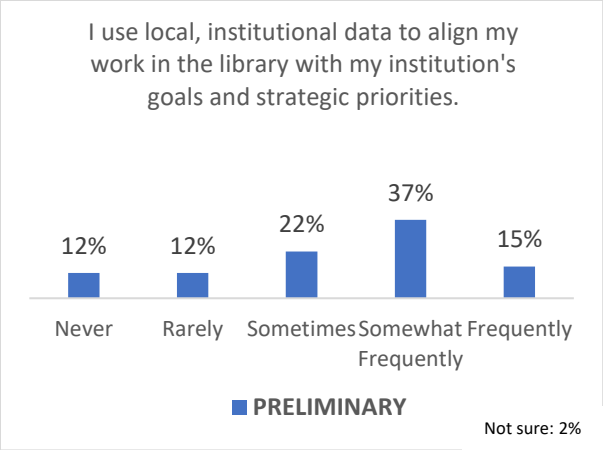

As a resulty of CARLI Counts, my library will likely increase its collection of data about the impact of our services on student learning and success.
0%
4%
42%
31%
23%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
POST PROGRAM

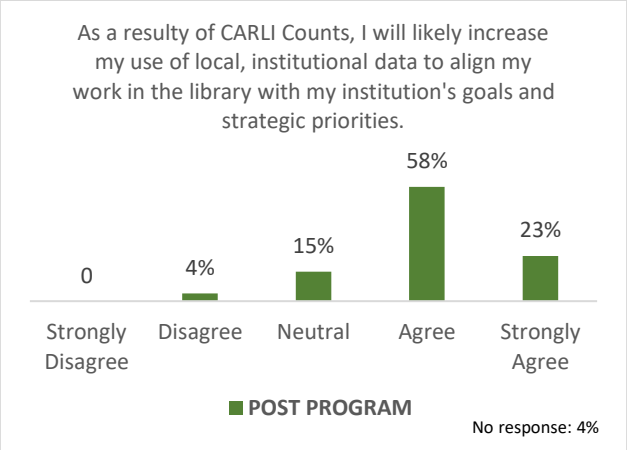

I use learner analytics to understand student learning.
34%
22%
12%
5%
2%
Never
Rarely
Sometimes
Somewhat Frequently
Frequently
PRELIMINARY
Not sure: 25%

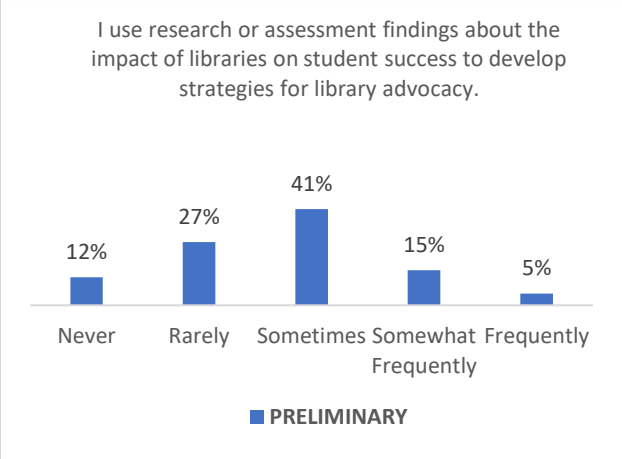

As a resulty of CARLI Counts, I will likely increase my use of learner analytics to understand student learning.
0
4%
38%
31%
15%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
POST PROGRAM
No response: 4%

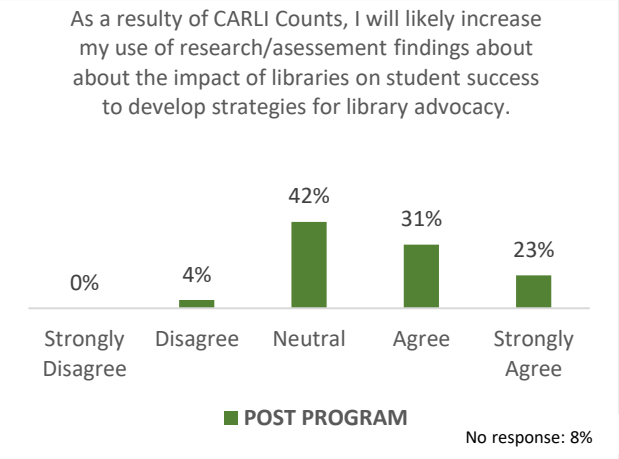

I use logic models for program/service planning, implementation, and assessment.
39%
17%
22%
0%
2%
Never
Rarely
Sometimes
Somewhat Frequently
Frequently
PRELIMINARY
Not sure: 20%

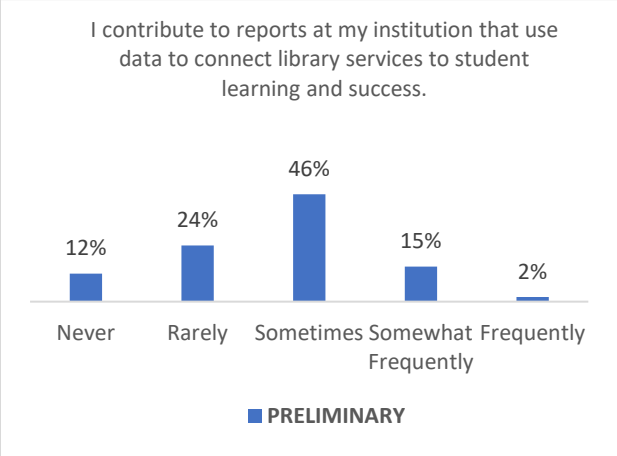

As a resulty of CARLI Counts, I will likely increase my use of logic models for program/ service planning, implementation, and assessment.
0
15%
42%
31%
8%
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
POST PROGRAM
No response: 4%

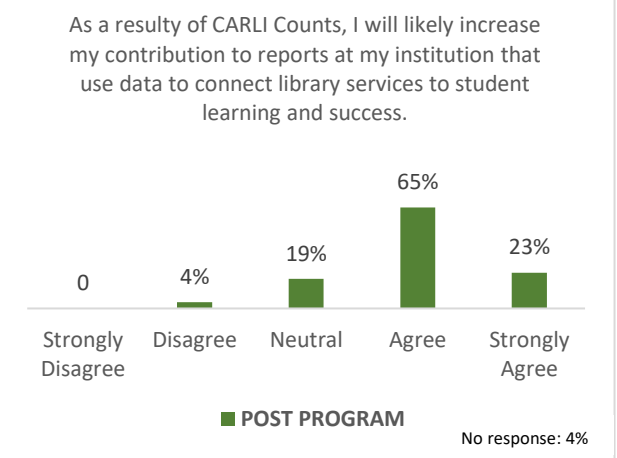












Sample Comments from Surveys about Understanding and Using Evidence-Based Library Practices

Thank you for helping to make it easier to apply the concepts into actual practice!

I am just really thankful to CARLI Counts, because I would never have done anything with collection and analyzing data or identifying data needs with respect to my college's campus priorities. I'm definitely not an expert, but I have a greater understanding and appreciate of the process.

The numerous resources surrounding IRB were immensely helpful in understanding the research process both within my own institution and also for other institutions.

The in-person workshops were foundational, both in the presentations and the team exercises. The birds-of-a-feather groupings that came together later in the process were also helpful. The webinars were useful in filling in gaps in knowledge related to my project and were accessible.

We aren't proving causation. We can't (for most of the projects we will undertake). The best we can do is suggest correlation, and that is good enough.

During the first in-person session, I fully realized that the absolute value of CARLI Counts was in the process of doing the work, not the output I would eventually have. Learning together, building on shared expertise, working through individual campus challenges were all the most valuable lessons. The actual projects were a bonus.

The IRB process was difficult, but ultimately I learned a lot from going through it and coming out the other side.

Project Reports: Sample Comments about Understanding and Using Evidence-Based Library Practices

After participating in CARLI Counts, we feel far more confident in our abilities to develop assessments and continue to build upon the assessment we developed for this project to gather more meaningful data. – Joliet Junior College

Without having to gather new research data, the library can leverage existing institutional data to discover useful information regarding library effectiveness. In our case, we were able to make connections to orientation effectiveness with course information, attendance records, student grades, and retention data. – Lincoln College

CARLI Counts . . . opened the doors for us to become part of the data conversation. – Sauk Valley Community College

This project presented me with a number of significant learning opportunities. I had the opportunity to learn more about citation analysis, including the limitations of existing tools to adequately compare the range of scholarship across academia. A deep dive into the scholarship of one program made it clear that no single number can appropriately measure the diversity and depth of a program, field, or institution. – University of Chicago

Leadership and Library Advocacy

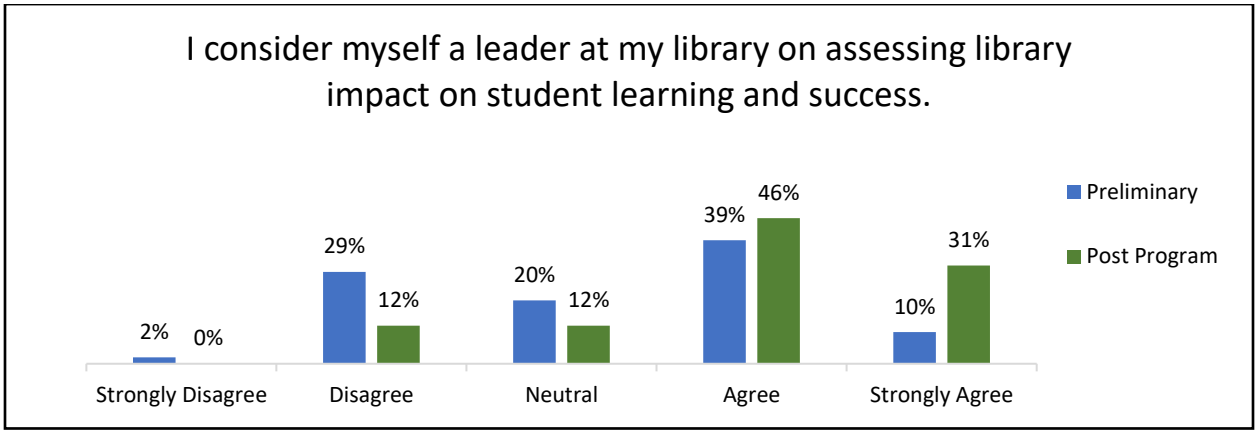
Key Findings

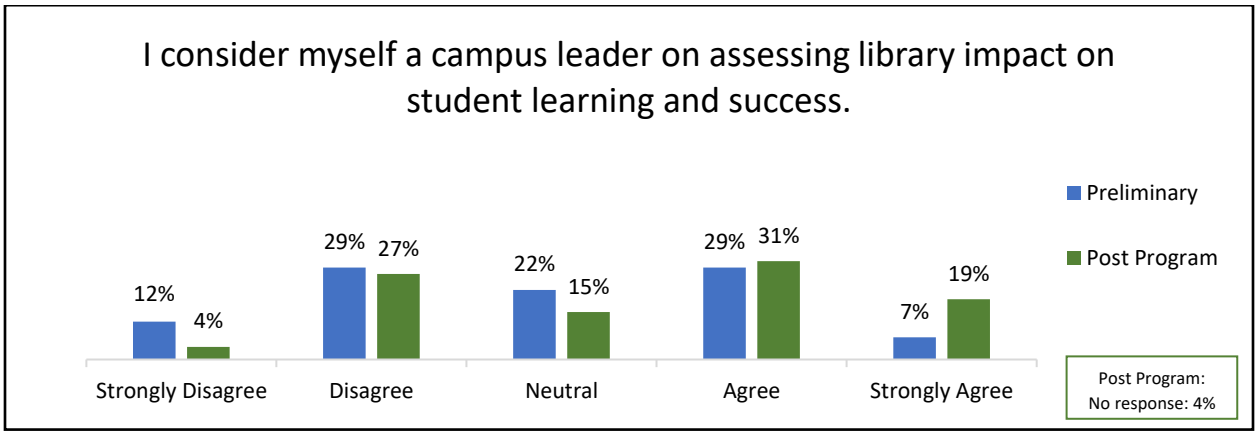
1. Strong gains in participants' perceptions of their leadership at their library with assessing library impact on student learning and success were made from the start to the conclusion of the program, as reflected by responses on the Preliminary Survey and Post-Program Survey.

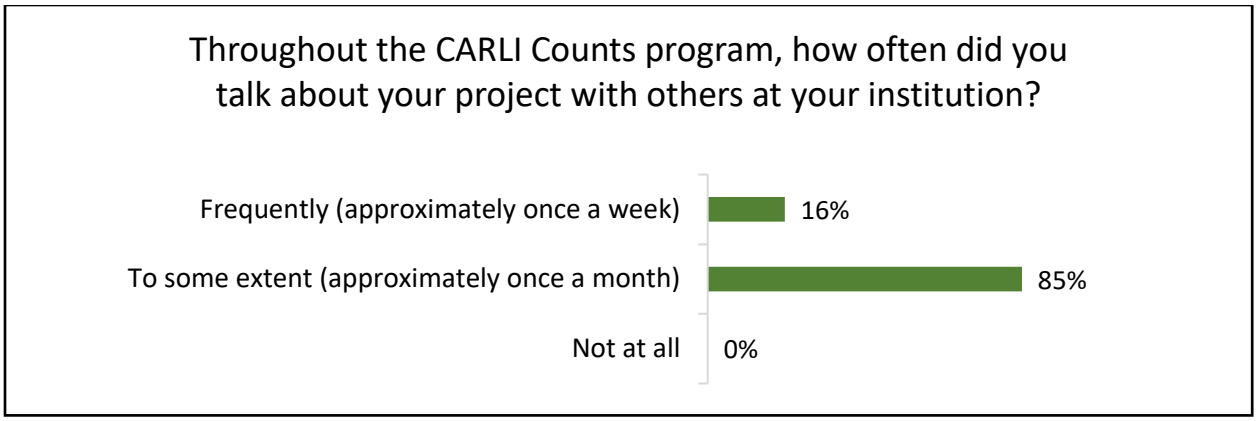
2. Modest gains in participants' perceptions of their leadership on their campus with assessing library impact on student learning and success were achieved between the start and conclusion of the program, as reflected by responses on the Preliminary Survey and Post-Program Survey.

3. Most participants talked about their projects with others at their institution *Frequently* (16%) or *To Some Extent* (85%).

Responses on Surveys







Sample Comments from Surveys about Leadership and Library Advocacy

[. . .] being recognized as someone who genuinely cares about student success and is actively trying to find ways to help both the students and the College. Professionally and personally, this is great.

Another moment that was powerful for me was when I came back to my campus and began talking to colleagues about the project. I believe talking to others on campus was actual homework (which I was resistant to because who wants to step out of their comfort zone?). I had a conversation that really catapulted my project to have a broad base of campus support.

Project Reports: Sample Comments about Leadership and Library Advocacy

As the university enhances writing instruction, the librarians have been asked to assist with creating information literacy outcomes and assessments. – Aurora University

One exciting result of participating in CARLI Counts was being asked to be part of the College's Student Success Committee. This the first year the library has had a seat at the table. – Lake Forest College

Through the findings of this study, the library has become a part of the assessment initiative that is campus wide. It has given the Learning Resource Center an opportunity to provide input in curriculum development in order to provide improved student support through resources and services. – Rend Lake College

Team Interaction and Communication

Key Findings

1. Team-based learning contributed to participants' CARLI Counts experience, with 61% of the Post-Program Survey respondents indicating *Strongly Agree* or *Agree* that *My team has helped me with the work I did on my CARLI Counts project.*

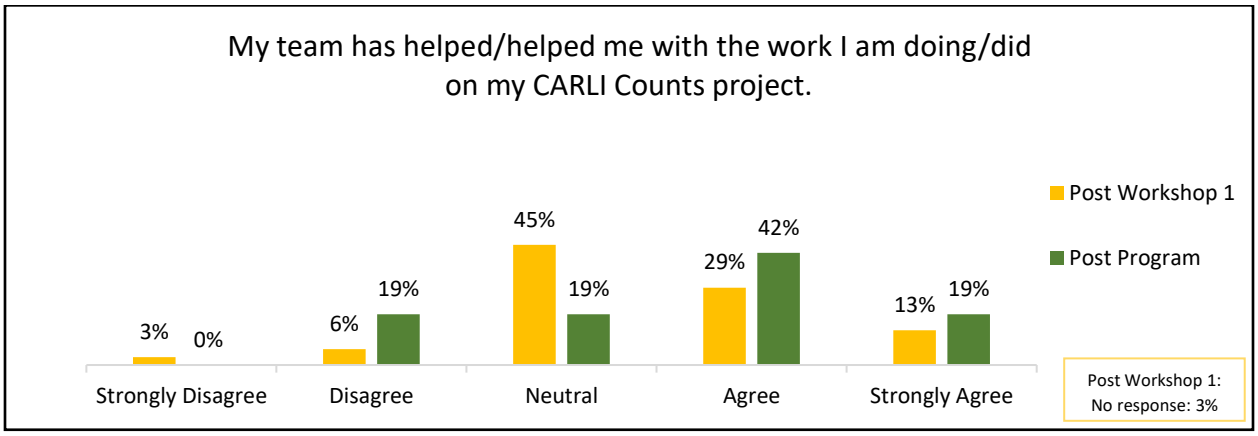
2. Cohort 1 participants reported that the value of specific team characteristics and communication increased from the first workshop to the program's completion, as indicated by a *Strongly Agree* or *Agree* response on the Post-Workshop 1 Survey and Post-Program Survey as follows:

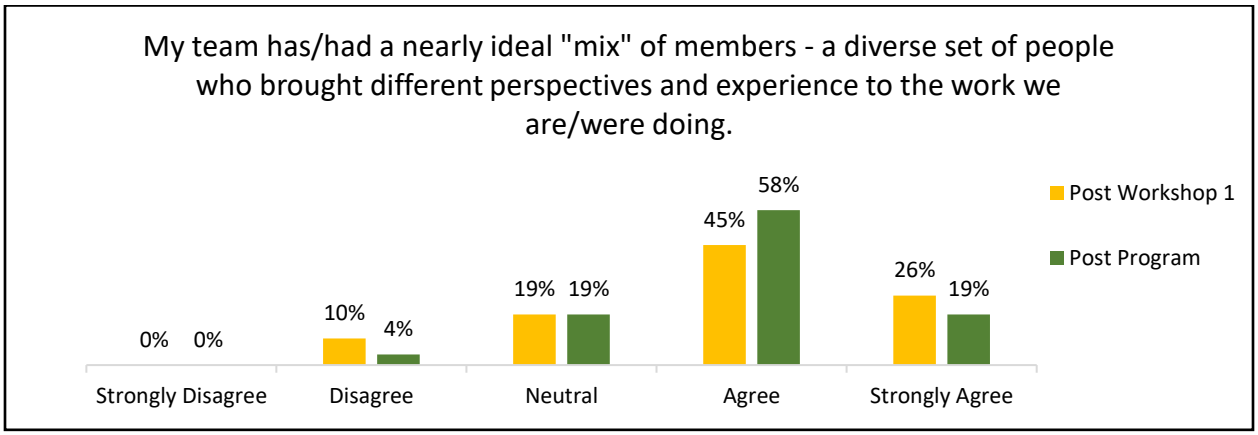
    - Assistance received from the team (from 42% to 61%)
    - Mix of experiences represented by the team members (from 71% to 77%)
    - Sharing of knowledge and expertise (from 67% to 81%)
    - Communication among team members (from 48% to 57%)

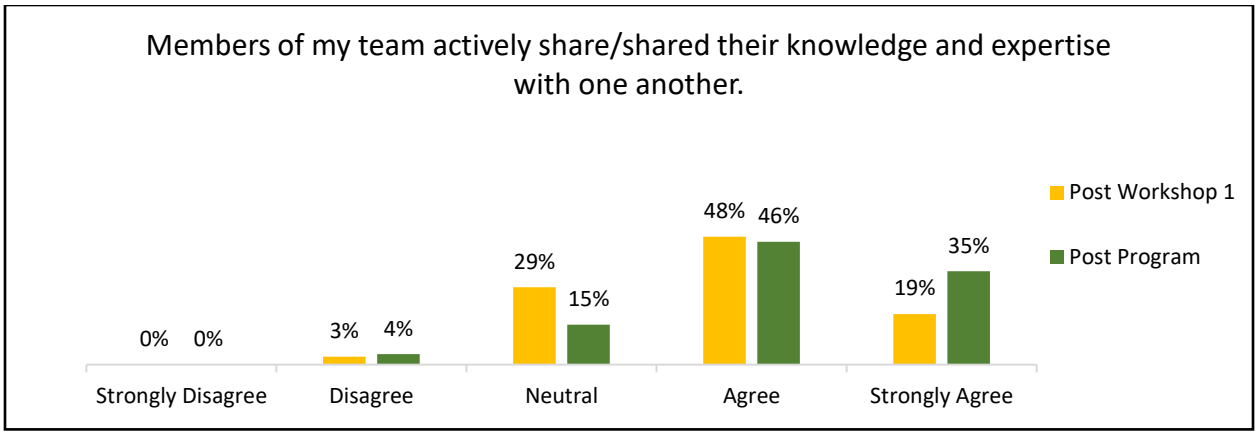
3. Throughout the CARLI Counts Year 1 program, 58% of participants indicated on surveys that they *Strong Agree* or *Agree* that *working with my team energizes/energized me*.

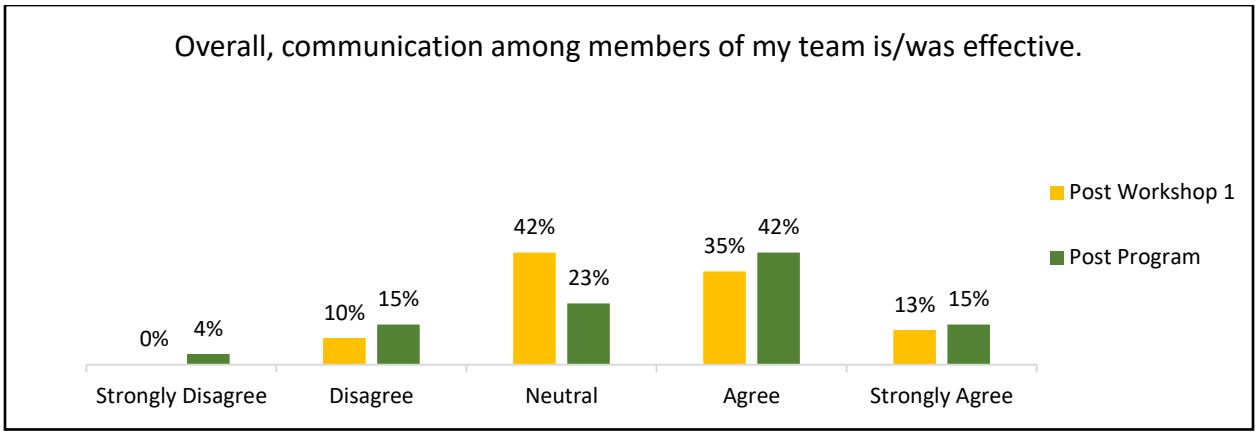
4. Some participants question the role and value of the team posters, particularly in relation to the learning gained and the outcomes of their individual campus projects, a finding reflected by responses in the Post-Program Survey open-ended questions.

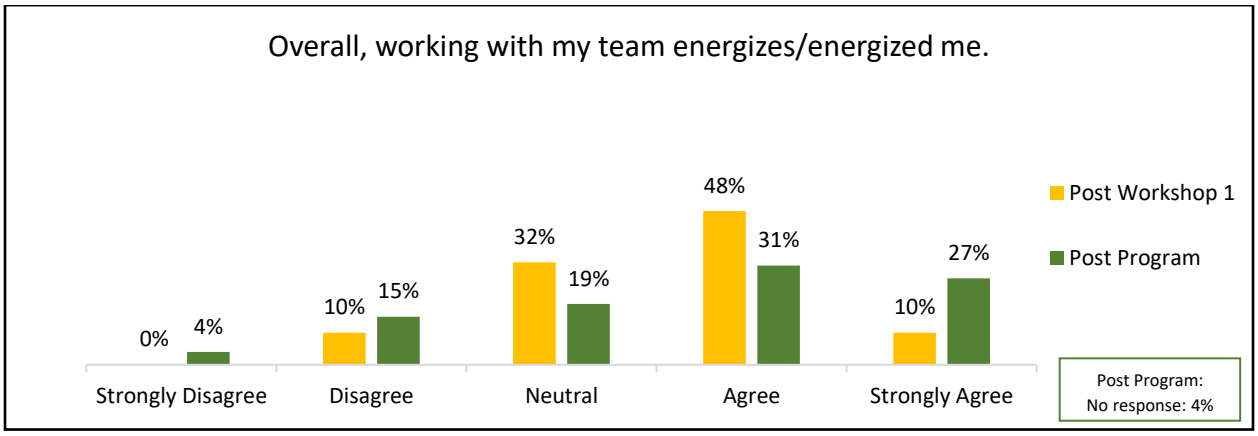
Responses on Surveys











Sample Comments from the Post-Program Survey about Team Interaction and Communication

That support and accountability was important throughout.

Overall, I had a good experience working with my team members. They were great sounding boards and helped steered me toward useful resources.

The composition of the team was wonderful - everyone was very generous in sharing experiences and advice. The only barrier was we tended to communicate via email which resulted in very long, disjointed email threads. I believe we could have had a more efficient communication strategy (using the discussion area of Canvas, for example!).

The team poster was difficult since it was so general and had nothing to do with our own research. So many of the posters had the same information--advice for future cohorts--so I'm not sure what the benefit of them was.

Team [name of team] had respectful, encouraging members. It's nice to have a new set of trusted colleagues from various regions in the State.

Felt like I got more out the "birds of a feather" discussions for my specific project. I don't know that a diverse set of team members was super helpful.

I thought the poster sessions at the annual meeting were kind of a waste of time and requiring all team members to be there was not necessary. They were less about the individual projects and more about what we learned by attending and I would have preferred it to be the other way around.

Project Reports: Sample Comments about Team Interaction and Communication

The support and ideas generated by Team Orange have been invaluable, as well as the support from our CARLI mentors. – Sauk Valley Community College

Participation in CARLI Counts, specifically the team-based structure and external accountability, provided interpersonal and institutional support that helped ensure project completion. – Triton College

Cohort 1 Projects: Motivations, Campus Collaborations, Areas of Focus, Methodologies, and Results

Key Findings

1. Over 50% of the projects were designed to align with campus-wide initiatives or priorities, including student success, retention, institutional accreditation, and new campus-wide curricula.

2. The projects involved collaborations with 18 different types of campus partners.

3. Correlational analysis of the relationship between two of more variables was the primary methodology used for data analysis and interpretation, demonstrated by its use in 20 projects.

4. The impact of the library on an aspect of student success and/or student learning at the course level was a primary area of focus for 24 projects.

5. Initial findings from several projects document a positive connection between the library and student academic success. Three notable areas include:

    - Library instruction increases student learning at the course level.
    - The library contributes to improved student retention and persistence.
    - Student use of library space enhances academic success.

6. The project findings are informing practice by leading to changes and improvements in the library services at the Cohort I institutions.

Project Reports: Summary[5]

Understanding Institutional Context and Campus Priorities

Cohort 1 participants recognized the importance of aligning the focus of their projects with academic priorities and key initiatives at their institutions. Although the participants represented 38 different colleges and universities from across Illinois, each with its own mission and academic priorities, the projects shared the common goal of situating the library's investigation within an institutional context. As a result, librarians were able to connect discussions and communication about library value and impact to academic issues and concerns that have campus-wide importance. Each participant reported the primary motivation or rationale for their project, which reflect investigations of library impact at their institutions.

[5] In the tables that summarize information from the Project Reports, the numbers do not always add up to 33, because several projects addressed more than one factor or item listed on a table.

Cohort 1 Projects: Motivations/Rationales for Projects	
Connect library impact to campus priorities on student success	11
Ascertain the effectiveness of a specific type of library instruction or reference/research consultation	6
Connect library impact to campus priorities on student retention	5
Library facilities renovation or review for student use	4
Assess discovery, access, and use of collections	3
Demonstrate value of library in the face of budget reductions/constraints	3
New curricular initiative or redesign	2
Institutional accreditation or program review	2
Review library operations or processes	1
Connect library impact to faculty scholarship	1
Understand students' use of the library	1

Sample Comments from the Reports about Institutional Context and Campus Priorities:

In the first year of [the Erikson Institute's] online program in 2018-2019, there was a 20% dropout rate by the end of the first two semesters. Since retention can be influenced by student interactions with campus personnel and faculty and a feeling of community, we hope having a librarian available in a seminar will improve retention. – Erikson Institute

As a campus, we are striving to become more aware of how our spaces and services reach and impact underrepresented students on campus. The library prides itself for being a welcoming space for students, but we had no data to inform our assumption. – Illinois Wesleyan University

By utilizing data in a way that is easy to understand, we will provide compelling evidence in reports and/or presentations to our stakeholders showing that library services and collections provide an invaluable foundation to the College's mission in achieving student success. – Morton College

The College places high value on student retention, persistence, completion, and success, which allowed this project to become a natural fit. Also, by showing that the library positively impacts college priorities, the library can show its value and worth in a quantifiable way. – Southeastern Illinois College

Developing Inquiry Questions

After considering the institutional priorities and the campus context in which their library functions, each Cohort 1 participant developed an inquiry question to guide their research project. The inquiry question posed a relationship between a library factor and an aspect of student learning and success, as exemplified by the following ten questions:

Cohort 1 Projects: Sample Inquiry Questions
Do students who receive in-person library instruction perform better on an information literacy quiz than students who complete an online tutorial? (Dominican University)
Will having a librarian present in a synchronous online class improve student retention? (Erikson Institute)
Is there evidence that students' employment with the library contributes to their success, as measured by greater GPA, persistence, and retention compared to the general populations? (Illinois Institute of Technology)
Does using the library space contribute positively to underrepresented students' sense of belonging on campus? (Illinois Wesleyan University)
What is the impact of reference interactions between librarians and First Year Studies students on the academic success and retention of the students and the sub-group of academically vulnerable First Year Studies students? (Lake Forest College)
What impact does library instruction have on the rate at which students include library resources on their final assignments? (Loyola University Chicago)
What is the impact of the library's embedded librarian on student learning/success as measured by grades on assignments and final [course] grades? (Morton College)

What is the impact of course-integrated library research instruction on students' abilities to select appropriate sources for their speech topics? (North Central College)
What is the impact of librarian outreach to adjunct nursing faculty and program coordinators on use of library services by School of Graduate & Continuing Studies (SGCS) students? (Olivet Nazarene University)
Will an ENG 103 library presentation correlate to higher student GPA for their next semester writing intensive class, i.e., Psychology, History, or Sociology? (Sauk Valley Community College)

The Cohort 1 projects considered the different ways that libraries may have an impact on various types of academic outcomes, as summarized in the two tables below. Following the tables, examples of individual campus projects are highlighted.

Cohort 1 Projects—Areas of Focus: Academic Outcomes	
Student Success (e.g., cumulative GPA, semester GPA)	15
Student Learning: Course	12
Other	5
Retention/Persistence	5
Academic Intimacy/Rapport	1
Student Learning: Assignment	1

Cohort 1 Projects—Areas of Focus: Library Factors	
Instruction (course)	11
Collection	5
Library Use (multiple types)	5
Reference/Research Consultation	4
Library Space Use	3
Other	3
Embedded Librarian	2
Student Employment	1

Investigating Library Impact on Student Success

Several CARLI Counts Year 1 participants, including Eastern Illinois University, Lake Land College, Lincoln College, North Central College, and Southeastern Illinois College, developed projects that investigated the impact of library instruction on student learning and success at the course level. Other projects focused on the relationship between reference or research consultations and academic success, as exemplified by studies at Joliet Junior College and North Park University.

Analyzing Library Impact on Retention and Persistence

Student retention is a priority at many institutions, and some CARLI Counts participants considered the role of the library in this campus-wide priority (i.e., Erikson Institute, Illinois Institute of Technology, Lake Forest College, and Rend Lake College). The Ames Library at Illinois Wesleyan University was interested in learning how library space contributes positively to underrepresented students' sense of belong on campus, a factor that impacts student engagement and retention.

Assessing Instructional Approaches and Methods

Specific methods, approaches, and formats of library instruction and their impact on student learning were the focus of some of the Cohort 1 projects. Morton College, for example, studied the effectiveness of its Embedded Librarian program, and Loyola University Chicago investigated the impact of the type of library instruction on the rate at which students include

library resources in the final course assignments. A comparison of the effect of in-person instruction versus an online tutorial on students' performance on an information literacy quiz was studied at Dominican University.

Determining the Impact of Library Use

Library use includes many facts as exemplified in investigations at several colleges and universities. Library collection use and its impact on aspects of student success and learning were the focus at Carl Sandburg College, Chicago State University, and Kishwaukee College. The effect of student library use, as demonstrated by a combination of factors (e.g., reference, circulation, remote library access, interlibrary loan, study room use, etc.), on student success and learning provided the framework for studies at the National University of Health Sciences, Olivet Nazarene University, and the University of Illinois at Chicago. The connection between student use of library space and aspects of academic success (e.g., student wellbeing, sense of belong, GPA, and persistence) were the focus of studies at Harper College, Northwestern University, and the University of Illinois at Urbana-Champaign.

Determining Action Research Methodologies

Each project's inquiry question informed decisions about the kinds of data needed to answer the question and the research approach and methodology best suited to collect and analyze the study's findings. Both quantitative and qualitative methods were used by the Cohort 1 participants, with some designing and implementing a mixed methods approach.

Correlational analysis, which involves determining the relationship between two of more variables, was the most common research approach employed for the studies. Lincoln College, for example, "used statistical analysis of existing academic data to determine the correlation between participation in the orientation session and student success factors, such as grade for the course, semester GPA, persistence and retention." The National University of Health Sciences recorded multiple library transactions of students enrolled during the Summer 2019 trimester and used these transactions to look at the impact of library use on cumulative GPA. At Harper College, the library completed a renovation in 2018 that included additional study rooms, and the staff wanted to find out if increased study room use was having a positive impact on student learning. They are in the process of using SARS data tracking software to correlate study room use to semester course grades.

Although quantitative methodologies, such as correlational analysis, were most frequently used in the CARLI Counts projects, some qualitative approaches were also part of the investigations. At Trinity Christian College, the impact of collaborative librarian-faculty instruction on student success was investigated by using a mixed methods approach. The study included an analysis of student feedback about library instruction gathered through an informal class discussion led by the faculty member. In addition, an assessment of source quality in students' research papers and data from a survey administered to students, supplemented the class discussion findings.

To explore how students at the University of Illinois at Chicago (UIC) perceive their experience in the library and their own learning, UIC librarians used a qualitative approach by

conducting interviews with up to 50 undergraduate students. This information will be combined with data collected from surveys completed by these same students. This mixed methods approach is designed to learn "whether students' library use (library space, instructions and online resources) has an impact on student learning beyond students' GPA.

Cohort 1 Projects: Methodologies	
Survey	11
Correlational Analysis: GPA	7
Correlational Analysis: Course Grade	7
Correlational Analysis: Retention or Persistence	6
Other	6
Rubric/Analysis of Student Product	4
Skills or Competency Assessment (e.g., test)	4
Interviews	2
Observation	1
Citation Analysis	1

Sample Comments from the Reports about Methodology:

This study would be easy to replicate at other institutions, as it uses statistics most libraries already keep and easily accessible campus information. – Eastern Illinois University

While the quantitative data was of interest, the comments contained the most useful and actionable information for our purposes. – Triton College

Collaborating with Campus Partners

Cohort 1 participants report that collaborating with others on campus (outside the library) has been an important part of their project. As the table below indicates, the campus partners involved in the projects represent a variety of roles and responsibilities and reflect a broad array of expertise. Some librarians noted that campus partners were particularly helpful with the project design and data collection and analysis. As Lake Forest College librarian Kimberly

Hazlett notes, ” “[The Institutional Research Analyst] was helpful in the planning stages and of great importance for analyzing the data and providing feedback.”

Cohort 1 Projects: Campus Partners	
Institutional Research/Institutional Effectiveness/University Analytics	23
Library Staff	19
Faculty	13
Academic Administrators (e.g., Provost, Dean, Director)	14
Academic Enrichment/Student Success Staff	7
IRB	4
Assessment Committee	4
Information Technology Staff	3
Instructional Designer	2
Student Affairs	2
Office of Diversity	1
Communications	1
Accreditation/Compliance Specialist	1
Student Employment	1
Financial Aid	1
Career Services	1
Bookstore	1
SWAN Staff	1
Registrar	1

The campus collaborations have also provided avenues to expand and strengthen the library's visibility on campus. The Cohort 1 participants frequently saw opportunities to promote the library as an educational partner working with other academic departments and units on campus to increase the academic success of students. For some librarians, their collaborative work resulted in establishing new partnerships that will continue beyond the project, as exemplified by projects at Aurora University, Lake Forest College, Olivet Nazarene University Rend Lake College, and Trinity International University.

Sample Comments from the Reports about Campus Collaborations:

. . . most importantly, after hearing about my unsuccessful experience of trying to deliver course-related library resources to program coordinators and individual (adjunct) faculty members, Associate Dean at the SGCS, Rochelle Brock, offered a new partnership between me and her new Instructional Designer (ID). – Olivet Nazarene University

Since embarking on this project, the library has formed a partnership with university advancement. As part of this partnership, the new survey will be amended to gather additional needed data to investigate the creation of a Friends of the Library group. – Trinity International University

Project Results: Findings about Library Impact, Service Development, and Library Advocacy

Establishing a Foundation for Evidence-Based Practices

Cohort 1 created numerous research designs and approaches for documenting the contributions of libraries to student learning and success. For many Cohort 1 participants, their projects were an initial step in establishing evidence-based practices for demonstrating to what extent or how the library has an impact on students' academic success. This groundwork for systematic data collection and analysis will yield findings in subsequent academic terms and provide a foundation for expanding the library's action research for service improvement and development. Some participants were not able to complete their studies within the time frame of the CARLI Counts program, or insufficient data or a small sample size resulted in inconclusive findings. The project design and process, however, are in place at these institutions, and additional research will likely result in findings that can be used to inform and improve library service development.

Library Instruction Contributes to Academic Success

Several projects generated initial findings that show a positive connection between the library and student learning and success. Five projects documented that library instruction increased academic success (i.e., Eastern Illinois University, Lake Forest College, Lincoln College, National University of Health Sciences, and Trinity Christian College). Eastern Illinois University, for example, found that "ENG 101 students who received instruction were more likely to pass the course and more likely to get an A or a B than those who did not receive instruction." Although subsequent data collection from numerous ENG 101 sections is needed to verify these

findings, the library is encouraged by the results and also discovered ways the library might provide additional assistance to students who struggle with passing ENG 101.

Trinity Christian College analyzed source quality in students' research papers submitted in four sections of a foundations course; two of the four sections included library instruction as part of the course. As Library Director Cathy Mayer explains, "Students demonstrate improved ability to selected credible sources after library instruction is presented within a curriculum context and offers immediate application to a research assignment."

Positive Connection Between the Library and Retention and Persistence

Two Cohort 1 institutions, Lincoln College and Rend Lake College, found that library instruction can be connected to increased student retention as a result of their initial studies. Both institutions, however, noted that multiple factors influence retention, which make their findings encouraging but not necessarily definitive. At Lincoln College, "The average one-year retention rate for Lincoln College students who attended a library orientation session in the fall 2017 semester was 13.3% higher than the average rate for full-time enrolled students in the fall 2017 semester and 6.4% higher compared to students who were enrolled in the freshman seminar course but did not attend the library orientation session."

In a campus project that investigated the impact of student employment in the library on student retention and GPA, the Illinois Institute of Technology learned from its early analysis of data (which is not yet complete) that "the average cumulative GPAs of library student workers who were eligible for Pell and/or Map grants was .21 GPA point higher than the total pool of Pell and/or Map grant eligible students. Further, 100% of library student workers were retained whereas 89% of the total pool of Pell and/or Map grant eligible students were retained during the period studied."

It should be note that a few institutions did not find a positive or a negative impact of library instruction on student success. These findings have prompted the librarians to review their study's research design to assure it's appropriate to the situation and to determine if additional data collection is needed based on sample size or data collection over time.

Reference and Research Consultations Increase Student Success

The impact of reference and research consultation services on student success was considered by three Cohort 1 academic libraries: Joliet Junior College, North Park University, and the University of Illinois at Springfield (UIS). At Joliet Junior College and North Park University, the projects are ongoing. The Brookens Library at UIS investigated the impact of research consultations across three sections of a psychology research methods course and found "a slight, but not statistically significant, positive effect on course grade."

Library Use Connected to Student Learning and Success

Three Cohort 1 participants demonstrated ways that student use of library space shows a connection to improved student success and academic rapport. The University of Illinois at Chicago investigated the impact of use of the library (including space) on students' learning beyond GPA. Illinois Wesleyan University looked at the use of library space by

underrepresented students and their sense of belonging on campus, and the University of Illinois at Urbana-Champaign investigated whether undergraduate students' use of library physical spaces have an effect on their cumulative GPA. All three studies report a positive connection between student use of library space and aspects of student success.

Carl Sandburg College investigated the availability of course materials in the library (i.e., textbooks and OER) on student success and found that "[s]tudent success rates were slightly higher for those who had access to their textbook through the library's course reserves, followed by success rates for students who were in OER courses. The lowest success rates were for those who were responsible for purchasing required course materials." Kishwaukee College also looked at collection use, focusing on off-campus database use. A review of proxy logs "found a modestly positive correlation between database logins and term GPA (.165 Pearson Correlation)."

Evidence-Based Investigations Foster Service Development and Library Advocacy

The Cohort 1 participants noted ways that the results of their campus projects are leading to discussions among staff at their libraries about improvements and new developments in services, collections, and organizational operations that are informed by the data collected and analyzed. Illinois Wesleyan University, for example, sees its study as "the first in a series of projects aimed to assess our work with diversity and inclusion." Likewise, Chicago State University plans to use their collection study as the basis for other library collection assessments. Beth Mandrell at Rend Lake College summarized the value of generating data analytics, saying, "The most important impact in participating in CARLI Counts is it has brought attention to the need of collecting and analyzing students' use of the library and how the library can use the stats to improve their materials and services."

In addition, the participants are communicating to campus constituent groups about the library's contributions to students' academic success at their institution. At Olivet Nazarene University, Jasmine Cieszynski, the Instructional Service Librarian, was able to leverage work on the project into an increased role for the library in the School of Graduate and Continuing Studies (SGCS). As she notes, "CARLI Counts gave me a powerful incentive to follow-up with others at the SGCS . . . As a result of approaching the [Instructional Design] team and Associate Dean, librarians were welcomed into the most critical phases of course development—an opening that was previously unattainable." Joliet Junior College librarian Aimee Walker also sees an enhanced role for the library on the campus and explains, "Once our data collection and analysis is complete, we intend to include our findings in the campus-wide conversations that are forming around the topic of assessment." As a result of the Cohort 1 projects, the participating libraries are increasingly part of conversations at their institutions about student learning and success.

Sample Comments from the Reports about Projects\ Results:

> *When our library took on this project, our initial intentions were to evaluate whether or not our reserve shelf had an impact on student success. However, as we received the final data from the Sandburg's Office of Institutional Effectiveness, we realized that this project opens up a larger conversation as to the library's overall role in supporting educational equity for our students.* – Carl Sandburg College

The finding will help library staff match budget expenditure to student priorities. – Judson University

This research is important as a first step in quantifying the impact various library services have on students. Our intent is to use data to help with decision making. – Lake Forest College

The final report will eventually be used to generate important discussions about data. First, these discussions can raise awareness about the use of data within the organization and illustrate each staff member's relationship to the data they collect. Additionally, within the different departments, specific data points can be assessed. What is missing? What might be removed? It may also be helpful for each area to articulate clear policies related to its handling of data through each phase of its life cycle and come up with an ongoing schedule for performing data audits. – Moraine Valley Community College

I am also interested in collaborating with another CARLI library that provides a similar research appointment service. – North Park University

The findings will be used in library planning documents. The findings also provide a foundation for future library space studies. – University of Illinois at Urbana-Champaign

Lessons Learned about Action Research: Successes, Challenges, and Strategies

Key Findings

1. The Project Reports and Post-Program Survey document that Cohort 1 participants gained an understanding of the iterative and dynamic nature of evidence-based practice (i.e., designing assessment to collect data and using that data to inform and improve library services and practices on a continuous basis).

2. Four main types of challenges emerged for Cohort 1 participants during their projects, as indicated by the Project Reports and Post-Program Survey responses:

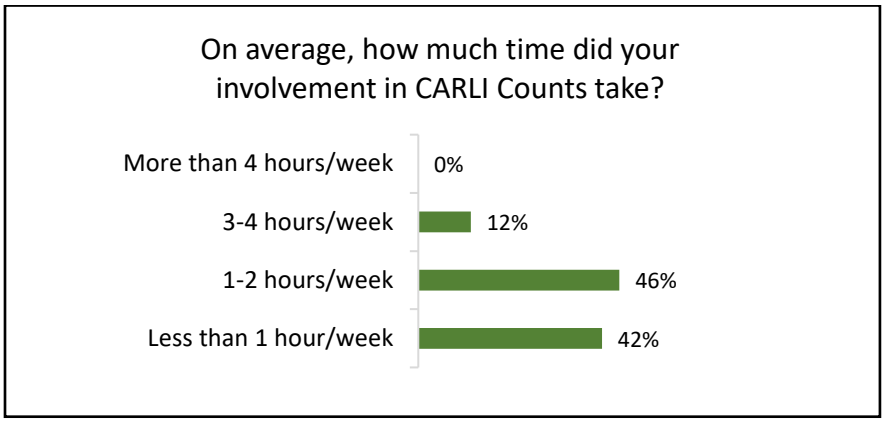
    - Lack of adequate institutional support for data collection and analysis
    - Getting buy-in from campus stakeholders
    - Library staffing issues
    - Competing priorities with other job responsibilities

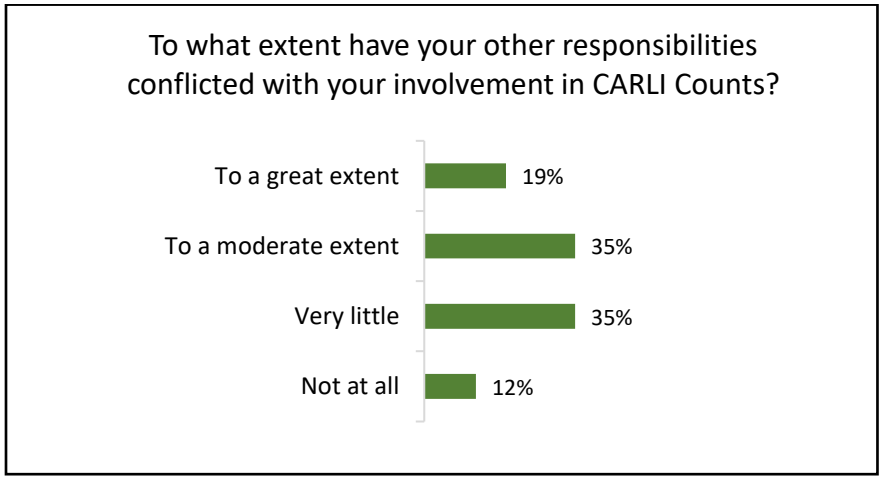
3. Five strategies to increase project success were noted by the Cohort 1 participants in the Project Reports and Post-Program Survey responses:

    - Network with other CARLI Counts librarians who are conducting similar studies.
    - Become familiar with multiple examples of library assessment and action research projects to replicate, as appropriate, and to generate ideas for research methodologies and approaches.

- Make sure the goals and amount of work required to complete the project are realistic and manageable.
- Develop competencies and strategies to initiate and maintain collaborative working relationships on campus.
- Secure adequate time from library administration to work on the project in relation to other job responsibilities.

Post-Program Survey Responses





Sample Comments from Post-Program Survey: Lessons Learned about Action Research

When I came to view the CARLI Counts project as primarily a learning experience, it helped me to view the process much more positively. Early on in the work I came to see weaknesses in our study and likely pitfalls in the research, but realizing that learning and progress was still happening kept me engaged and productive. CARLI Counts wasn't a standalone end unto itself. It was the beginning of continually doing the work to connect the library to student success.

I enjoy the pre-workshop homework of reading articles. It helped get me in the right mindset and equipped me with some knowledge before the first in-person session. I often refer to the logic model information/ handouts.

Staffing issues at my library was my biggest challenge. This project was a lower priority than just getting regular work done.

I was provided institutional "support" in that I was able to attend the meetings and participate, but the project itself had to be a team effort and it was difficult at first thinking about how I could ensure colleagues did their share of the work when they were not reporting to me, and without it being directly mandated by our shared supervisor. It resulted in me having to regroup and shift my project a few times in order to come up with something that was feasible within our current organizational structure and formal and informal culture.

The "light bulb" moment was really just related to learning that most libraries face some form of institutional challenge related to doing research and assessment.

I felt like I learned a lot about the issues, but I haven't really 'finished' and therefore I feel like my experience was incomplete. I think the idea of having this all wrapped up in 12 months is lofty but impractical. It just takes longer to collect data.

. . . while most staff were on board, "selling" the project to a few of my colleagues proved challenging. This made me aware that I will need to be, in some cases, more thoughtful about how I garner the support I need internally.

It would have been nice to have dedicated time to work on CARLI Counts, but I'm not sure that would have been possible. Most of my work can't be delegated to another person, so I ended up doing CARLI Counts on top of my other work.

Project Reports: Sample Comments about Lessons Learned about Action Research

Our library is proof that assessment projects are within reach for smaller libraries, though it might only be possible through strong partnerships with other departments on campus. – Carl Sandburg Community College

The data provided by EZ Proxy logs are not as rich as we had assumed. Log files may include user names, how much content was accessed, and which databases were used. However, they only track content usage at the aggregate level; it does not appear possible to show what specific content was used by individual users. As a result of this project, I recommend that our Library consider a different proxy tool, such as Open Athens, that can provide the richer data that we need with a better user interface and reporting options. – Kishwaukee College

Unfortunately, low participation by faculty (for phase one and two of data collection) prevented any meaningful findings. Insufficient data makes me hesitant to make any claims about this project. – Loyola University Chicago

Sustaining and Building On the Participants' Evidence-Based Library Work

Key Findings

1. Cohort 1 participants recognize the value and potential role of sustaining a "community of practice," reflected by their Post-Program Survey responses indicating a desire to continue discussion about their assessment work with the Cohort 1 participants, requests to connect with Cohort 2 participants, and interest in updates about other CARLI institutions' initiatives related to action research and evidence-based practices.

2. Cohort 1 participants expressed the need in the Post-Program Survey for expanded professional development on evidence-based library practices.

Post-Program Survey Responses

Sample Comments from Post-Program Survey about Sustaining and Building On Project Work

Developing a network of librarians to reach out to for assistance with future projects [would be helpful] since many of the project's others were undertaking are of interest to me in the future.

Continuing professional development webinars regarding projects others are doing or similar assessment topics. Sharing Cohort 2 projects with Cohort 1 participants.

Continue offering professional development about evidence-based library practices, particularly webinars.

Having a check-in in 6 or 12 months to see what further progress occurred in assessment.

Maybe it would be nice if CARLI included information about those librarians who were doing research within their libraries within [the CARLI] news feed.

Occasionally putting together something that describes new CARLI Counts [work], like projects that libraries have gone on to do.

Continue to have webinars that we can use for training.

APPENDIX

Post-Program Survey: Open-Ended Question Responses[6]

If there is anything else you would like to tell us about your understanding and use of evidence-based library practices, please use the space below:

- Thank you for helping to make it easier to apply the concepts into actual practice!
- I am just really thankful to CARLI Counts because I would never have done anything with collecting and analyzing data or identifying data needs with respect to my college's campus priorities. I'm definitely not an expert but I have a greater understanding and appreciation of the process. And I would not be afraid to try another project.
- Nothing else.
- It was both a great refresher of familiar concepts and an introduction to new ones!
- This experience allowed me to gain knowledge of the whole evidence-based library assessment process. It is my hope that it can be used as an example for various curricular and co-curricular forms of assessment. Thank you.
- The above questions don't take into account what we knew before going through CARLI Counts. Unless we were given the same questions pre-CARLI Counts and I've forgotten?
- I would like more help on data analysis. Example, how and when to do ANOVA. More specific methods of analyzing the type of data I have.

Which 3-4 CARLI Counts activities or resources were most helpful for understanding how you can use evidence-based library practices in your work at your library?

- The numerous resources surrounding IRB were immensely helpful in understanding the research process both within my own institution and also for other institutions.
- I also really appreciated the group activities at the in-person meetings. General discussions with group members, the group session with Beck and even the group sessions with Birds of a Flock were all great in providing different ways to think about our projects.
- Developing a network of Librarians to reach out to for assistance with future projects since many of the project's others were undertaking are of interest to me in the future. Examples of other institutions' projects.
- IRB session. Handouts on putting the claim together.
- I really enjoyed the Storytelling session during the July on-campus time. I wish it had been longer and more of an activity. Showing us all the places to look at other library

[6] Minor typing and grammatical errors have been corrected in the survey responses.

assessment projects was also very helpful. The webinars were a good way to keep the momentum after the in-person sessions and I wish there had been more of them.

- I feel like my mind is blanking and answering this after each in-person session would have been easier.

- I definitely think the in-person meetings were really important, for team building and support! Having the presentations on taking care of ourselves as well as the perspective of Beck was very important! I loved, loved the Project Outcome Toolkit from ACRL. Also, all the help and assistance of CARLI staff, and Lisa H.

- Dependent/independent variables

- Unpacking claims. Time to talk things through with our teams

- Presentations by Lisa Hinchliffe. Team discussions. AiA examples.

- Unpacking claims exercises. Logic model. Kate McDowell talk on storytelling with data. Having the opportunity to chat formally/informally with peers about their projects.

- Dennis' presentations were so helpful and encouraging. Learning about how to tell the story was important, too. The Project Outcome webinar was useful. Truly, everything worked together to create a wonderful "whole."

- Webinars. Beck was a big help too.

- The hands-on work during the first session was invaluable. Seeing other examples from Assessment in Action (and others) and really talking about the how of the research process was enlightening. All assessment is valuable, even research (as opposed to Research).

- I enjoy the pre-workshop homework of reading articles. It helped get me in the right mindset and equipped me with some knowledge before the first in-person session. I often refer to the logic model information/ handouts.

- Learning about how IRB works--that was totally new to me since I have never taught at a university or wanted to get a PhD. The storytelling session was great--learning how to spin a story to school boards is something I've working on to use in my presentations. Finding out what other research projects have happened in the past and what ones could work in my library.

- The in-person workshops were foundational, both in the presentations and the team exercises. The birds-of-a-feather groupings that came together later in the process were also helpful. The webinars were useful in filling in gaps in knowledge related to my project and were accessible.

- Fill in the blank activity for our project/variables. One-on-one phone call with Lisa. Lisa's review of my (draft) final report. Learning about the AiA top principles/discoveries.

- Team-based work was critical to have an ongoing support system and sounding board for ideas. Great to hear from industry/profession experts, both via webinars and face-to-face. The workshop nature of the face-to-face programming was vital--it isn't enough to hear lecture; you have to dig in and actually do it.

- The worksheets. I'm a fan of fill in the blanks, visualizations of problems, etc.

If there is anything else you would like to tell us about your team and its influence on your project or your experience as a participant in CARLI Counts, please use the space below.

- When I shared my project with the team, I felt I was discouraged to work on my project because they thought my goal was too ambitious. While everyone has a different background and skills for the completion of the project, I did not like the overall atmosphere in the team where set the limits and focus on what we cannot do. Honestly, I did not feel any support from our team when working on the project.

- Felt like I got more out of the 'birds of a feather' discussions for my specific project, I don't know that a diverse set of team members was super helpful. The problem was we didn't really cement our projects until after the February meeting. A lot of the team members showed up in February because they were sent by their directors and they had no real sense of what they should do or what the institutions' priorities were. This was problematic and made me feel like we didn't really do a lot of constructive talking and thinking during that first meeting because half the team had little to say.

- That support and accountability was important throughout.

- My team didn't interact much outside of the in-person sessions, but the time we spent together was valuable. Participants from outside my team were also valuable resources -- some people I already knew and felt comfortable talking to as well as people I just met as part of CARLI Counts.

- I had a great team! I'll miss working with them.

- Overall, I had a good experience working with my team members. They were great sounding boards and helped steered me toward useful resources.

- When I'm talking about my team, I'm referring not only to other librarians who worked with me on this, but also administrators and others across campus.

- Not at this time.

- The composition of the team was wonderful - everyone was very generous in sharing experiences and advice. The only barrier was we tended to communicate via email which resulted in very long, disjointed email threads. I believe we could have had a more efficient communication strategy (using the discussion area of Canvas, for example!).

- The team poster was difficult since it was so general and had nothing to do with our own research. So many of the posters had the same information--advice for future cohorts--so I'm not sure what the benefit of them was. We also had one person on the committee

who didn't work well with others, so we didn't get much done during the group work time. This led to a lot of frustration in the second face-to-face meeting.

- Team *[name of team]* had respectful, encouraging members. It's nice to have a new set of trusted colleagues from various regions in the State.

- Our team leader basically dropped out after the second in-person session. We did not hear from her at all after about mid-August. I assumed the functional responsibilities of team leader but was unprepared to provide mentorship, particularly when I was hoping to benefit from that support myself.

What were 2-3 significant barriers or challenges, if any, you had when you started, implemented, or completed work on your CARLI Counts project? Briefly explain.

- Staffing changes around the completion phase of CARLI Counts made it more difficult to devote time and resources to the CARLI Counts project. At the beginning of this project, certain assumptions were made about how much time I would be able to spend on this project, and then suddenly that was not the case. Otherwise, most of the issues we ran into were fairly expected (timing of the survey for instance) and will be addressed in future work on this project.

- Since multiple people were collecting data, ensuring everyone was collecting it in the same manner

- Lack of data. Disconnection from IRB.

- The barriers were institutional: Institutional Data collection and access, the program where I was trying to assess my impact on retention changed just when I would have been participating so it left me feeling like I didn't have anything to do nor could I refocus my project. We are such a small school that it felt like anything we tried to do to demonstrate our impact on retention would not be statistically significant. I felt like I learned a lot about the issues, but I haven't really 'finished' and therefore I feel like my experience was incomplete. I think the idea of having this all wrapped up in 12 months is lofty but impractical. It just takes longer to collect data. Stretching it out to 15-18 months would have been easier...we'd have two full semesters to collect data and then could do the analysis while still meeting with the cohort.

- Time. Buy-in from other library staff.

- Switched jobs midway through the project to a non-library job.

- I think my barrier was trying to do too much, starting too big. It is way better to start small. My other problem was working in Word and not being able to download Excel graphs into Word, so I copied and pasted and then when I changed from Word to the PDF, my spacing was all over the place and I didn't have time to do anything about it.

- Staffing issues at my library was my biggest challenge. This project was a lower priority than just getting regular work done. We didn't have a library director and we are already short-staffed. The timing was also difficult. Over the summer we run with a leaner staff, so I was pulled into teaching and covering the desk instead of working on my project.

- A challenge was trying to do the Alma migration work and CARLI Counts project.

- Initially, I had some difficulty settling on a project. My data inventory/data gathering audit project was an outlier project of sorts and I was concerned it wouldn't fit well within the CARLI Counts program. Despite those worries, I moved forward with that project and was relieved to find that there was space for my project and other such projects within this context. Time was probably the largest barrier once I began working on it, as I did have some competing deadlines/projects running simultaneously. The interviews portion of my research was somewhat time-consuming (though arguably well worth it, considering what we have discovered so far). Because of this, I had to narrow my focus of the larger library-wide project to a pilot within one department to make it work within the CARLI Counts schedule. This definitely had an impact on how I framed and wrote up my CARLI case study. There is likely much more to discover. Also, while most staff were on board, "selling" the project to a few of my colleagues proved challenging. This made me aware that I will need to be, in some cases, more thoughtful about how I garner the support I need internally.

- The IRB process was difficult, but ultimately I learned a lot from going through it and coming out the other side. The other challenge is that our institutional research analyst is overworked and through no fault of his own, I need to wait for further data analysis.

- Deciding what data was needed. It took me a while to narrow it down.

- People who were helping with the project left our institution during the project. We also had to divert attention to a large weeding project and, with limited staff, could not put as much time into the CARLI Counts project.

- Balancing CARLI Counts with my other work.

- The earliest challenge was how quickly we were expected to determine the subjects and variables in our study, due to some of the group exercises at the first in-person workshop. Allowing for more exploration before settling on a study would have been better. Other than that, the biggest challenges were internal: collaborating to design the survey and data collection were some of our biggest hurdles.

- I became discouraged by non-follow-through from my initial campus partners. They were happy for me to do the work of matching library tools to their existing assignments but didn't implement any of the instructional materials into their course template. Getting consistent data from various library departments. Reference, ILL, and eResources all collect information differently and provided data from different spans of time, despite my request for certain dates. I became discouraged about not having face-to-face communication with supposed "partners" (see my first point). Relying on email wasn't a rich enough mode of communication.

- I was provided institutional "support" in that I was able to attend the meetings and participate, but the project itself had to be a team effort and it was difficult at first thinking about how I could ensure colleagues did their share of the work when they were not reporting to me, and without it being directly mandated by our shared supervisor. It resulted in me having to regroup and shift my project a few times in order to come up

with something that was feasible within our current organizational structure and formal and informal culture. By the time I completed the work on the project, I had taken on a new role, so I was trying to wrap up a library-focused project but was no longer intimately part of it.

- I wish I had known we needed a specific project going into it--I feel like figuring the project out took a good 6 months and then there was barely time for actually doing it. Time was a challenge.

In hindsight, when you faced barriers or challenges while doing your project, what types of support or resources might have helped you reduce these barriers or challenges?

- More discussion of working with colleagues on data collection and analysis and getting everyone in the Library on board with helping.

- Perhaps a more formal introduction from the Dean of the Library to the IRB officer would have helped.

- I think we are all so busy that having some deadlines would have been helpful in creating external motivation.

- A one-on-one with someone when I realized my project was likely not going to be possible the way I envisioned it. I'm kind of left feeling like I can't walk away with a relevant, completed study and that feels frustrating.

- You don't know what you don't know, and you might not always even realize it. I was trying to figure if an English presentation demonstrated a correlation with increased student GPAs within the next writing intensive courses they took right after the English course. For some reason, and maybe because I hadn't had statistics in 20 years, I thought you could just average the grades and compare them. Fortunately, someone on my team said, “Wait a minute, where is all that complicated math that you have to do?". My reply was "what math?" And then she showed me. So, I really had no idea how to do that math and I "Googled" it. Yes, I'm a librarian and I did that, and Google was great! It showed me that you could create a scatter type graph and then use Excel to figure out the R squared value and the p value. Maybe you need to be open to suggestions.

- If this was a higher priority -- perhaps tied to a campus initiative -- then I could have justified the time to work on it more.

- There wasn't support or resources that could have helped. However, it could have been much worse to balance if the Alma migration and/or CARLI Counts program were poorly organized and executed. CARLI leaders have done a fantastic job leading both.

- I cannot really think of anything the CARLI Counts program could have logistically/realistically provided to address the issues I experienced. While I needed more time, I cannot imagine the program running longer than it did.

- For the first challenge, I just needed to connect with the right people who could help me, which I eventually did. For the second challenge, it would be great if we had additional institutional researchers, but that's not likely to happen. I think the timing of when I ask

him to help me matters a lot. My research project ended during a very busy time of year for him. If I could time things differently, that would help, but that would also depend on the project.

- More examples of community college evidence-based projects. Grouping community colleges together.

- A stipend for additional staff or grad student would have helped.

- It would have been nice to have dedicated time to work on CARLI Counts, but I'm not sure that would have been possible. Most of my work can't be delegated to another person, so I ended up doing CC on top of my other work.

- Letting us learn a bit more about the project before the first weekend

- CARLI Counts did well to provide an abundance of support and resources. However, having a more clear line of communication with CARLI Counts participants that were working on similar projects would have been helpful. I know we did a birds-of-a-feather meet, but something more static and continual would have been nice.

- Me arranging and hosting face-to-face meetings with 'partners" and the people in other library departments to explain the purpose and timeline of the project.

- I received the support I needed, through my CARLI team and through Lisa. I just had to get to the insight myself.

- For both barriers... making this a 2-year project would have greatly helped.

Thinking back on your CARLI Counts experience, was there a "light bulb" or "aha" moment for you? If so, please share it with us in the space below.
[It might be something related to your own professional growth . . . or your knowledge of evidence-based library practices . . . or your understanding of libraries . . . or insights about student learning . . . or team-based learning . . . or (you tell us!)]

- I think the most helpful thing was during the Feb session when I realized the project could be very focused, "small" if you will, and that was okay. I think Assessment can be a big, scary, and unwieldy prospect and making it bite sized was very helpful.

- I'm sure there were many, but they were too long ago to fully recall. Much of Beck's work with us brought “aha” moments.

- I think my "aha" moment came when I talked to Dennis Krieb and he suggested following students from an ENG 103 (second semester English class) to their next Psychology, Sociology, or History classes to see if the presentation had a correlation to improved GPAs.

- I don't know that there was an “aha” moment, but I am so busy with my day-to-day work that it was perfect to have some time set aside to just think about this. I find these immersive experiences useful because they allow you to focus on just one task for a concentrated amount of time -- which is enough time to make meaningful progress.

- I can't name one light bulb moment, but the entire program contributed to my professional growth.

- The "light bulb" moment was really just related to learning that most libraries face some form of institutional challenge related to doing research and assessment.

- There are two things that stood out for me. The first thing was getting the results of the research back after months of collecting data and finding out that what we are doing really makes a positive difference. That was affirming and motivating. The other was being recognized as someone who genuinely cares about student success and is actively trying to find ways to help both the students and the College. Professionally and personally, this is great.

- As I worked through my project, I found that I needed to narrow down my focus to get better results.

- During the first in-person session I fully realized that the absolute value of CARLI Counts was in the process of doing the work, not the output I would eventually have. Learning together, building on shared expertise, working through individual campus challenges were all the most valuable lessons. The actual projects were a bonus. Another moment that was powerful for me was when I came back to my campus and began talking to colleagues about the project. I believe talking to others on campus was actual homework (which I was resistant to because who wants to step out of their comfort zone?). I had a conversation that really catapulted my project to have a broad base of campus support. In that moment I thought, "Oh, CARLI knows what they are doing!"

- When I came to view the CARLI Counts project as primarily a learning experience, it helped me to view the process much more positively. Early on in the work I came to see weaknesses in our study and likely pitfalls in the research but realizing that learning & progress was still happening kept me engaged and productive. CARLI Counts wasn't a standalone end unto itself. It was the beginning of continually doing the work to connect the library to student success.

- As I stated in my final report, "CARLI Counts gave me a powerful incentive to follow-up with others at the SGCS despite the failure of my partnership with Nursing program directors. As a result of approaching the ID team and Associate Dean, librarians were welcomed into the most critical phases of course development -- an opening that was previously unattainable. This break-through moment was powered by participating in CARLI Counts – “thank you!"

- This biggest “aha” moment was realizing my project could be "easy," and still be relevant and impactful. I didn't have to work hard, I just had to work smart. The difficulty of the project doesn't correlate to its success.

- We aren't proving causation. We can't (for most of the projects we will undertake). The best we can do is suggest correlation, and that is good enough.

How might CARLI help you sustain and build on the evidence-based library work you have done?

- Continuing professional development webinars regarding projects others are doing or similar assessment topics. Sharing Cohort 2 projects with Cohort 1 participants.

- Maybe have a CARLI Counts 2...like a follow up for the participants to keep them motivated and working on these projects. Have Assessment workshops around the state so we can get more people involved.

- Having a check-in in 6 or 12 months to see what further progress occurred in assessment.

- Maybe it would be nice if CARLI included information about those librarians who were doing research within their libraries within their news feed?

- Occasionally putting together something that describes new CARLI Counts work, like projects libraries have gone on to do.

- CARLI can continue to sponsor webinars and workshops related to the topic and, perhaps, somehow support the connections we made with our peer libraries during the program.

- Continue providing webinars on the topics we covered in CARLI Counts.

- Continue to have webinars that we can use for training.

- Follow through with the publishing and promotion of the CARLI Counts study outcomes from both cohorts.

- Invite librarians to join a cohort, with a mentor, who keeps us on track with our own projects (no further webinars needed). Perhaps just graduates of cohort 1, or wait until cohort 2 has completed their experience? Probably better to start again sooner than November 2020.

- Continue to share best practices and case studies; continue to provide in-person and virtual professional development opportunities.

- I feel like I've just scratched the surface and wish I could work on the project more with support. (Wish I could meet with my group, have a one-on-one with Lisa, etc. now that I have my data. It took me that long to get it.)

Is there anything that you would like to let CARLI Counts staff know about your experience in the program?

- I thought the poster sessions at the annual meeting were kind of a waste of time and requiring all team members to be there was not necessary. They were less about the individual projects and more about what we learned by attending and I would have preferred it to be the other way around.

- Thank you. It was truly valuable.

- I wish we had talked more about the ethics and risks of collecting giant datasets. I felt like we were told, "This is happening on your campuses with or without the library participating. Check your feelings here." One way to mitigate such risk is to only collect what you need and have a clear plan for analyzing. I've heard Lisa say similar things, but don't remember this being mentioned at CARLI counts. More specifically, I wish this thinking/lens had been talked about with relation to under-represented and (historically) oppressed members of our campus communities. It could be as simply as, "We recommend not reporting about groups of individuals smaller than 5 people." This advice becomes even more important because these are populations about which Presidents and Provosts care.

- It was just a truly great experience!

- Thank you! It was a great learning experience!

- Overall, it was a great program! I appreciate that the lessons and activities were thoughtfully designed. Thanks to the CARLI Counts staff for all your work and support!
- It was a fantastic opportunity. Thank you so much!

- I would like to thank them for their support as we worked through the projects and for planning great training days.

- I thought it was very informative and well organized.

- Thank you so much for the opportunity and for treating us like valued, special, worthy, participants at our in-person sessions. Your hospitality "spoiled us," and went beyond basic accommodations. This treatment enabled me to have "down time" to process the lessons and to come up with ideas for my project. It also illustrated how valuable assessment is--we weren't hosted in a dingy basement somewhere, doing drudgery (which is what I thought assessment would be like). Rather, we were treated like rock stars!

- Great program. I learned so much, developed great relationships, and our library and students are better for it. Keep up the innovative and rewarding work!

- Thanks. You all are great.

TWO-PART QUESTION -- Your input will be useful!

CARLI is considering a project that would involve multiple institutions investigating the same inquiry question about library impact on student learning and success.

Would you recommend that your CARLI Counts project inquiry question be used? (If so please write the question in the space below.)

If not your question, is there another inquiry question you would recommend? (Please write the question in the space below.)

- I don't have a specific question, but I think this is a fantastic idea!

- I won't recommend mine because its collection driven.
- Maybe? Question was: Does an embedded librarian in an online course improve retention?
- I'm not sure what should be researched, but it should be something that hasn't been well covered in the literature yet.
- No, I don’t think I would recommend my question. I would like to see if library instruction leads to successfully completing more credit hours. I think this was done with the Greater Alliance Library study though.
- It would be interesting to see my project be expanded across institutions. My inquiry question was "How can the library and campus administrators scale the library budget to maximize the library's contributions to student success?"
- No --my question was not directly related to student learning/success.
- Does 1st semester use of library resources, library instruction sessions, and library staff interactions have an impact on college students' grades, retention, and completion?
- I think my inquiry question could be replicated and useful across many campuses: What is the impact of a one-shot information literacy session in a core general education course on critical thinking?
- I love this idea! It would be great to have a cohort of libraries do the same question--group them by community college, 4-year, rural/suburban/urban, etc. That research in Illinois libraries would be much stronger than one-off research at one institution. I do not recommend looking at my research question--the impact of library instruction on grades.
- Yes, I'd like to see our local inquiry assessed in a coordinated way at multiple CARLI institutions: "The effect of library orientation on student success and future library use.”
- We had great success using the ACRL Project Outcome surveys. One of the challenges was a lack of comparative institutional data, which limited the survey's usefulness for us. This is a perfect example of a network effect--the more libraries use the survey, the more impactful and useful it will be. I highly recommend that CARLI encourages its member libraries to participate in these surveys, as a part of CARLI Counts or not.
- No. I think mine is too institution specific. Assessment of IL program or a space related question could be interesting.