



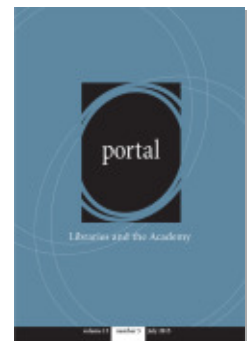
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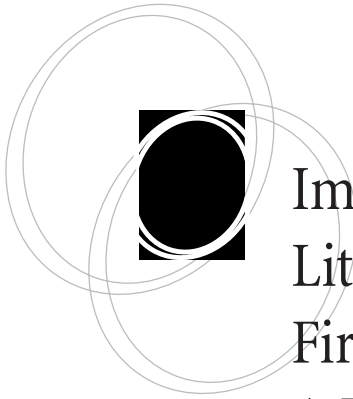
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Impacting Information Literacy Learning in First-Year Seminars: A Rubric-Based Evaluation

M. Sara Lowe, Char Booth, Sean Stone, and
Natalie Tagge

abstract: The authors conducted a rubric assessment of information literacy (IL) skills in research papers across five undergraduate first-year seminar programs to explore the question “What impact does librarian intervention in first-year courses have on IL performance in student work?” Statistical results indicate that students in courses with greater levels of strategic faculty-librarian collaboration performed significantly better in IL outcomes than those in courses with low collaboration. Intensive librarian course support was not necessary to achieve significant learning gains; these tended to occur when librarians provided initial input into syllabus and assignment design, followed by one or two assignment-focused IL workshops.

Introduction

The goals of this study were to assess first-year undergraduate information literacy (IL) “habits of mind”¹ as well as the impact of library instruction and faculty-librarian collaborations in assignment design at varying levels of intensity on student IL skills. To do so, the authors conducted an assessment of IL performance in culminating research papers using a rubric, a scoring tool that provided clear descriptions of the performance expectations for each part of the work, at varying levels of mastery. The papers were written by students in five undergraduate first-year seminar programs at the Claremont Colleges (all in Claremont, California): Freshman Humanities Seminar at Claremont McKenna College; Humanities, Social Sciences, and the Arts 10 at Harvey Mudd College; First-Year Seminar at Pitzer College; Critical Inquiry at Pomona College;



and Writing 50: Critical Analysis at Scripps College. During the 2013–2014 academic year, Claremont Colleges first-year seminar program coordinators, campus assessment officers, institutional research officers, or combinations of the three supported the process of collecting student papers and their corresponding assignment prompts as part of the Association of College and Research Libraries (ACRL) Assessment in Action (AiA) program. Nineteen librarians in seventeen pairs then evaluated the papers. The Claremont Colleges Library (CCL) was one of seventy-five libraries selected to join the first round of this national assessment initiative, which was funded by a \$249,330 National Leadership Demonstration Grant by the Institute of Museum and Library Services.

Librarians at the Claremont Colleges have a long history of engagement with faculty and students in first-year seminar courses, providing IL instruction and research support to sharpen essential student skills, such as evaluation of source materials and attribution of evidence. Since 2011, CCL has directed concerted efforts toward creating

... CCL has made it a central goal to facilitate coordinated, outcomes-oriented IL instruction throughout its first-year programs.

a programmatic and pedagogically effective approach to all five of the first-year seminars at the Claremont Colleges, which had previously not received strategic treatment. The Western Association of Schools and Colleges (WASC) recently adopted IL as one of five redesigned “core competencies” required for undergraduate institu-

tional accreditation.² Based on this mandate and ongoing programmatic expansion of librarian-faculty collaboration in support of research skills foundations in the initial college years, CCL has made it a central goal to facilitate coordinated, outcomes-oriented IL instruction throughout its first-year programs. The instruction includes authentic and iterative assessment of student IL skills.

In collaboration with coordinators and faculty of first-year foundations programs, CCL offers “program-integrated” IL instruction to the five undergraduate Claremont campuses on a semester basis. These program-level collaborations entail “opt-in” pairings of subject-appropriate liaison librarians with seminar faculty to provide customized, flexible, and syllabus-tailored support for student development in IL skill areas.³ This support typically takes the form of librarian-led workshops, online research tutorials or guides, one-on-one student appointments oriented toward specific research assignments such as papers or annotated bibliographies, or some combination of the three. Increasingly, conversations between librarians and faculty related to research assignment design are becoming a feature of these course pairings. CCL’s collaborative relationship with first-year seminar programs is well established, due to its consorsial role (one library for seven distinct institutions, two graduate and five undergraduate).⁴ Nevertheless, proving the value of library programs across the colleges is an ongoing necessity. Demonstrating librarian impact on student IL learning, a core WASC competency area, emerged as a key method of showing direct library contributions to the educational missions of the Claremont Colleges.



Literature Review

Scholarship focused on assessment of library instruction and IL learning is robust and well-established. Two areas most relevant to the current project are rubric evaluation and the effectiveness of “one-shot” instruction versus more sustained or “embedded” interactions.

The library literature includes much discussion of rubrics. Their growing importance in IL assessment is demonstrated by the multiyear Rubric Assessment of Information Literacy Skills (RAILS) project, a large-scale evaluation of the viability of using IL rubrics to assess student learning.⁵ Many education experts view rubrics as a foundational tool for assessing student learning.⁶ In some contexts, they provide a superior alternative to testing because they allow for objective, “authentic” assessment of student work. Rubrics make clear to students the expectations of their instructors, and provide consistent and transparent performance criteria.⁷

Rubrics make clear to students the expectations of their instructors, and provide consistent and transparent performance criteria.

When used for assessment in a library educational context, rubrics provide an opportunity for librarians and teaching faculty to come to an agreement about the characteristics of a skill set (in the case of libraries, usually various aspects of IL), and also furnish rich contextual data about student learning.⁸

Lorrie Knight evaluated students’ bibliographies in a common assignment produced in a first-year seminar course using a rubric created by a librarian and other faculty and found rubric assessment of IL learning outcomes to be both objective and reliable.⁹ Lara Ursin, Elizabeth Blakesley Lindsay, and Corey M. Johnson discuss using a critical thinking rubric to assess first-year seminar students’ evaluation skills and highlight weaknesses in student work at Washington State University in Pullman.¹⁰ Librarians, peer and graduate facilitators, advising and learning center staff, and other academic faculty worked in teams to evaluate bibliographies using a rubric and allowed the authors to determine the impact of the library session as well as the quality of the final projects. Elizabeth Choinski, Amy Mark, and Missy Murphey effectively used a rubric in a for-credit Information Resources class.¹¹ The authors chose rubric assessment because it provided valid, objective results without a large outlay of time and effort from a small pool of librarians.¹² Debra Hoffmann and Kristen LaBonte successfully partnered with faculty in developing a rubric to assess first- and third-year students’ IL skills in a writing and rhetoric program. They found that IL proficiency can be viewed in student writing using an IL rubric.¹³ Erin Daniels developed a rubric to assess first-year students’ evaluation skills in an oral communication and critical thinking course and found rubric assessment helpful in identifying areas that can be addressed in more targeted assignments to strengthen students’ skills.¹⁴ Karen Diller and Sue Phelps used a mixed-methods approach employing rubrics to evaluate student work in electronic portfolios to assess the general education program at Washington State University-Vancouver.¹⁵ The strength of rubrics as assessment tools is highlighted through the positive results of multiple reliability tests. Davida Scharf, Norbert Elliot, Heather A. Huey, Vladimir Briller, and Kamal



Joshi discussed the benefits of authentic assessment through undergraduate students' writing portfolios at a technical university. They used the rubric assessment to build a replicable assessment tool, establish students' baseline IL skills, and improve their own instruction.¹⁶ Dorothy Anne Warner employed rubrics for programmatic assessment of students' research journals in a required English composition course using rubrics for the same goals as Scharf and her coauthors.¹⁷ Barbara D'Angelo discussed the results of rubric assessment of an IL component in the gateway course of the Integrative Studies Program at Arizona State University West in Glendale, which resulted in more effective learning for students.¹⁸ Educators have also used rubrics more widely than in traditional IL assessment scenarios; for example, Magia Krause assessed student learning of archival instruction using a rubric.¹⁹

One-shot instruction is the foundation of most IL instruction programs, but there has always been a thread in the literature that attempts to measure whether it is effective or as effective as more sustained instruction. In general, the literature falls on the

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side that more sustained instruction produces better student IL skills. Smiti Gandhi reports on a five-session IL class model in an entry-level English class and found, via pretests and posttests, that students learn more in multiple sessions than they do in a traditional one-shot.²⁰ Mark Emmons and Wanda Martin moved to a more inquiry-based approach to

IL in an English course and found students in the new course were better at selecting materials.²¹ Julie Gilbert, through pretests, posttests, and citation analysis, found that first-year students with multiple IL sessions report greater self-efficacy with and more use of library resources.²² Molly Flaspohler compared a more traditional IL instruction program to a pilot group receiving enhanced IL learning opportunities at a small liberal arts college and found that the more integrated approach produced better student learning.²³ Michael Hearn, also at a small school, discussed an embedded librarian model with an introductory English class and found that the quality of student research improved.²⁴ Multiple authors have written about the benefits of more intensive collaboration in online courses. Swapna Kumar and Marilyn Ochoa give recommendations about intensive librarian involvement in an online graduate course.²⁵ Interestingly, Yvonne Mery, Jill Newby, and Ke Peng, in their comparison of online IL instruction versus one-shot in-person instruction, found that students in the online course had higher quality bibliographies.²⁶ One exception to the more-is-better literature is an article by Elizabeth Spievak and Pamela Hayes-Bohanan, who report the results of one-shot assessment that shows students do make IL gains even with very little IL instruction.²⁷ For librarians who have to teach one-shots and are unable to become more embedded in a class, Bonnie Swoger writes that pretests and posttests can be an effective assessment for one-shots.²⁸

Another aspect of the one-shot versus embedded debate hinges on faculty-librarian collaborations. More integrated instruction benefits not only student learning but also faculty teaching, productivity, and course quality²⁹ and can improve faculty learning and faculty-library communication.³⁰ Christine Black, Sarah Crest, and Mary Volland argue that a successful IL infrastructure can only come from that faculty-librarian collabora-



tion.³¹ Sue Samson and Kim Granath demonstrate through a mixed-methods approach assessing a first-year program that working with teaching assistants and faculty to integrate IL into the writing curriculum results in effective student learning.³²

As this selective review of the literature reveals, there is a lack of research that investigates the progressive effects of IL instruction in librarian-faculty curricular collaborations of varying intensity levels through authentic rubric evaluation of student work. Interested in whether or not disparate levels of librarian intervention resulted in differences in student IL learning, over the 2012–2013 academic year the authors conducted a rubric-based assessment project on a sample of student papers from one of Claremont's first-year seminar programs. Our published findings determined that greater levels of librarian collaboration in first-year seminar courses produced statistically significantly stronger IL performance in culminating student papers.³³ This research involved only one of the five Claremont Colleges first-year seminar programs, however, somewhat limiting the generalizability of the conclusion. Expanded to all five colleges and with a slightly simplified research design (see the Methodology section), the present study seeks to test and confirm these findings across multiple institutional cultures and a larger student work sample.

Methodology

To assess first-year students' IL skills as well as the impact of library instruction and librarian assignment design collaborations on student learning, the authors worked with first-year seminar coordinators and campus assessment or institutional review officers to collect papers ($N = 520$) produced by Claremont Colleges students in first-year seminar courses over the 2013–2014 academic year, with corresponding assignment prompts. Librarian impact was measured by characterizing each librarian-faculty collaboration within the paper sample (54 total classes across five colleges) by a rating for Librarian Course Engagement Level (1 = none, 2 = low, 3 = moderate, and 4 = high; see Table 1). These levels were self-reported by teaching librarians for each first-year course collaboration, then associated with rubric evaluation data.³⁴ After coding, the investigators removed student names and course information, and librarians conducted rubric-based evaluation of IL performance as exhibited in the papers.

This project used the Claremont Colleges Library Information Literacy in Student Work Rubric (Appendix A),³⁵ adapted from an original produced at Carleton College in Northfield, Minnesota,³⁶ to evaluate the student paper sample. This rubric assesses three of five IL "habits of mind" in authentic student writing and other work: (1) attribution; (2) evaluation of sources; and (3) communication of evidence. The rubric is a widely used evaluation instrument within the Claremont institutions, both undergraduate and graduate, that has been adopted for accreditation-level student assessment by several of the colleges. It features four evaluation levels: 1 = initial; 2 = emerging; 3 = developed; and 4 = highly developed. The rubric is designed to facilitate assessment of IL within any type of student output, regardless of discipline, format, or grade level.

Prior to scoring, pairs of raters conducted a norming session to calibrate the implementation of the rubric. Each pair read two identical sample papers and scored them separately using the common rubric; they then met to discuss scores and come to a con-



Table 1.
Faculty/librarian course collaboration scenarios

None	No faculty collaboration with librarian.
Low	Librarian conducts standard one-shot library session/class visit, creates a course guide, OR students complete the Start Your Research Tutorial and Quiz; little to no syllabus/assignment collaboration.
Moderate	Librarian conducts 1–2 sessions AND/OR students complete the Start Your Research Tutorial and Quiz, moderate syllabus/assignment collaboration.
High	Librarian conducts 2 or more library session(s)/class visits; students complete Start Your Research Tutorial and Quiz; AND significant syllabus/assignment collaboration.

sensus on interpreting and applying rubric criteria consistently. Following the norming exercise, each team subsequently scored approximately thirty first-year papers in the post-norming evaluation period. Nineteen librarians in seventeen pairs read papers in three separate rounds; twelve pairs in the first round, two in the second, and three in the third. In total, $N = 520$ papers were read and scored (not including the two norming papers). Overall, reliability between raters was moderate to strong.³⁷

Findings

Librarian Impact and Overall Results

The goal of this evaluation project was to determine what effects (if any) librarian engagement in first-year classes had on student IL performance as demonstrated in end-of-semester research-focused writing assignments. Examples of librarian engagement included IL instruction, course guide creation, student completion of an online IL

...in courses where librarians provided more systematic and strategic instruction and assignment design consultations, student performance in the areas of attribution, evaluation, and communication improved significantly.

tutorial and quiz in the campus learning management system, and collaboration with faculty on syllabus or assignment design. Librarians customize their work with each first-year seminar to the syllabus and course context, and these pairings tend to take the form of one of three “scenarios,” from low to high intensity (Appendix B). As stated earlier, impact was measured by characterizing each librarian-faculty collaboration according to a scale we called Librarian Course Engagement Level (1= lowest, 4 = highest).

Based on our analysis of 520 student research papers across 54 seminar classes, higher levels of librarian involvement in these courses strongly correlated to improved IL performance in student writing. The published findings of our pilot study note that any concerns of validity of the research design based on “unstructured pedagogical approaches and multiple individuals with potentially disparate teaching efficacies”

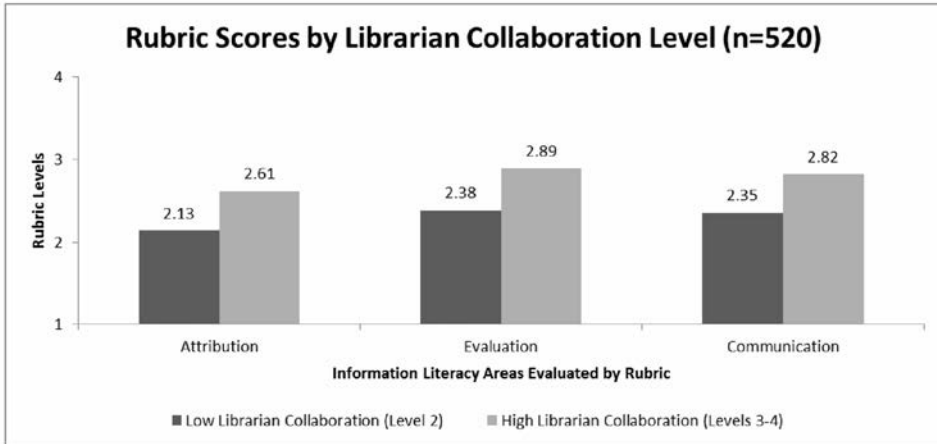


Figure 1. Overall rubric scores by librarian collaboration level

is mitigated by community of practice among CCL teaching librarians, coupled with shared first-year IL learning outcomes. In addition, individual teaching librarians work with multiple faculty at different collaboration levels.³⁸ Figure 1 shows that in courses where librarians provided more systematic and strategic instruction and assignment design consultations, student performance in the areas of attribution, evaluation, and communication improved significantly.

Performance difference by collaboration level in all three IL areas is statistically significant between moderate/high collaborations (level 3 or 4) and low collaborations (level 2). Not enough level 1 papers were received to make any conclusions about students' IL skills in those classes. Differences between level 3 (moderate) and level 4 (high) collaborations were not statistically significant,³⁹ indicating that while more strategic collaboration is beneficial to students' IL skills, librarians need not be “embedded” at a level greater than approximately two face-to-face workshops per course for students to make significant IL gains. These findings suggest that greater levels of engagement by librarians in first-year seminar courses (including consultations with faculty about research assignment design) lead to higher student IL learning gains, but intensive in-class collaboration is not necessary to achieve these gains.

College-Specific Results

This evaluation analyzed papers from all five undergraduate Claremont Colleges. College names have been redacted in this report for purposes of ensuring anonymity.



College-specific results are consistent with overall project findings but vary respectively in student learning gains based on a number of cultural and institutional factors. These variations are due in part to distinct faculty cultures and first-year seminar structures, which affect how librarians interact with them on an individual and programmatic basis. The discussion later explores relevant factors and structures.

College A

College A has a more traditional faculty culture, which emphasizes autonomy in the classroom. College A's required first-year foundations course supports the development of analytical and research writing, but faculty can interpret that broadly. Consequently, writing and research assignments vary significantly. Since at least 1985, the library has paired a librarian with each section's faculty to introduce students to the range of resources available for research-intensive assignments and reinforce foundational principles in information literacy. This programmatic collaboration has continued uninterrupted. In 2011, librarians began attending the course's annual faculty retreat to discuss research assignment design and describe productive faculty-librarian course collaboration scenarios.

In 2013–2014, librarians worked with 90 percent of first-year classes at College A.⁴⁰ Over half (55 percent) of collaborations were low (one-shot, level 2). Ten percent of sections chose not to collaborate with a librarian (level 1), 26 percent of collaborations were level 3, and 6 percent were level 4. Papers were received from 35 percent of class sections ($N = 139$), of which a sample, $n = 72$, were read. The papers were almost evenly split between low collaboration (level 2) and high collaboration (level 3 or 4), 54 percent versus 45 percent, respectively. College A results showed an increase in students' IL skills from low to high collaboration, but, due to the smaller sample size, *communication* was the only statistically significant (p -value less than 0.05) change.⁴¹ The authors believe a larger sample size would likely result in statistically significant differences between collaboration levels in all three IL areas. We plan to repeat this research with a future first-year cohort and more systematic paper collection strategies.

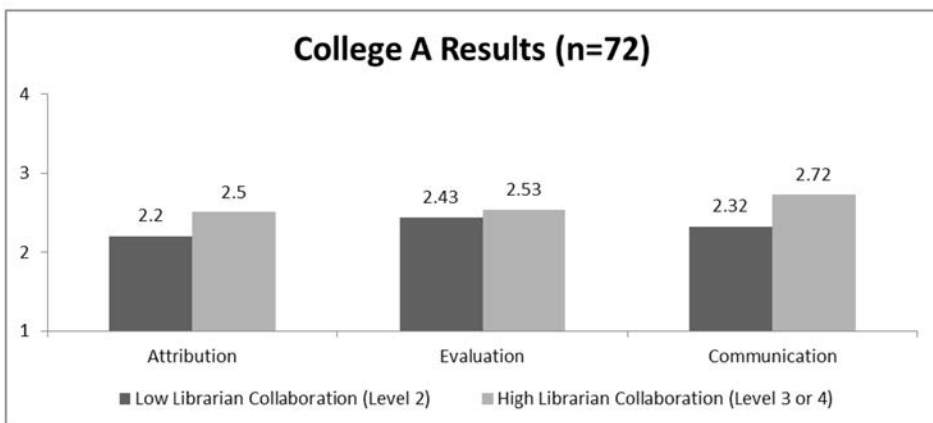


Figure 2. College A results



College B

The first of two required first-year courses, this seminar leads students through a structured series of assignments that support the development of research writing. The course is taught largely by adjunct faculty. Subject liaison librarians and faculty have collaborated on an individual basis since the mid-90s, and more heavily since the mid-2000s. College B's first-year course is more structured than those of the other four Claremont Colleges. Although each class is unique, there are strongly defined program-level learning outcomes, which allow librarians to use a common in-class IL skills worksheet. In 2012–2013, the Claremont Colleges Library began the process of pairing a subject liaison librarian with each section to more systematically introduce students to the range of resources available through the library, as well as present and reinforce foundational IL principles. In fall 2012, librarians began attending the annual faculty seminar training to describe productive faculty-librarian course collaboration scenarios, research assignment timing and design, and the CCL-developed IL rubric. A distinguishing feature of this program is unequivocal support for librarian collaboration on the part of its faculty coordinator, resulting in total buy-in among seminar faculty to engage with librarians at greater depths than other seminar collaborations within the Claremont Colleges.

In 2013–2014, librarians collaborated with 100 percent of first-year classes at College B and also received 100 percent of student papers. As previously described, these courses featured more significant librarian collaboration on average than at other colleges (either at level 3 or level 4), with a 65 percent / 45 percent ratio of level 3 to level 4 collaborations. There were no level 1 or 2 collaborations. The project sampled over half of the final papers produced by students in this program ($n = 162$ of total $N = 286$), resulting in a sample size with a 95 percent confidence level and 5 percent margin of error. Although there were slight gains in students' IL skills between level 3 and level 4 collaboration courses, only the change in evaluation was statistically significant, and then just barely.⁴² College B findings clearly demonstrate that the most intensive librarian and course collaborations are not necessarily the best course of action, but that close programmatic collaboration at the faculty and faculty coordinator level strongly supports librarian integration and cultural buy-in regarding the benefit of IL instruction.

College C

College C's required first-year foundations course supports the development of analytical and research writing. The library has provided some instruction to courses since the early 2000s, but whereas only one-third of faculty contacted individual subject liaisons to provide IL instruction in their sections in 2011–2012, increased library programmatic outreach and support for the course in late summer of 2012 increased this number to 76 percent of sections in fall of 2012. To achieve this increase, librarians began attending annual faculty workshops to discuss productive faculty-librarian course collaboration scenarios and research assignment design, and paired a liaison librarian with faculty in each section. Similar to College B, strong support from the faculty program coordinator facilitated this expansion. However, similar to College A, a fiercely independent faculty culture has resulted in a slower overall process of IL integration.

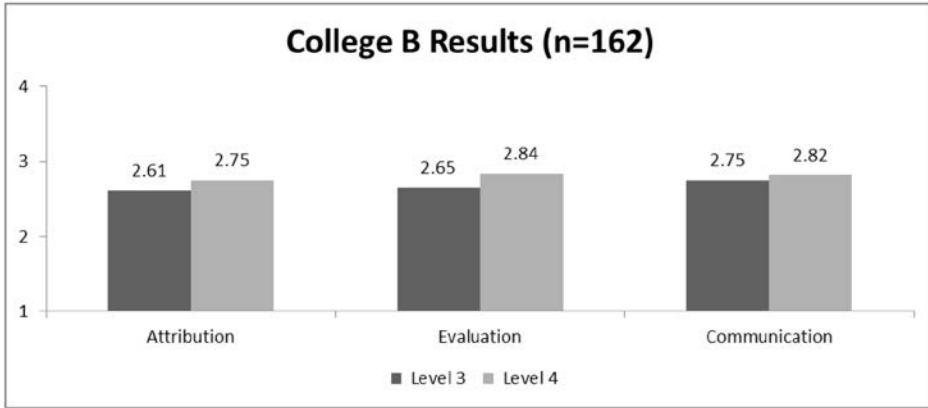


Figure 3. College B results

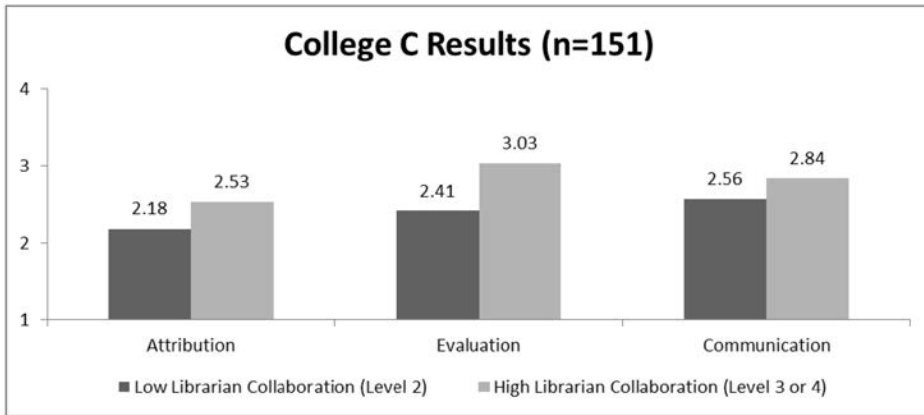


Figure 4. College C results

In 2013–2014, librarians worked with 79 percent of first-year classes at College C. Collaborations were fairly evenly spread among the levels (21 percent were level 1; 37 percent level 2; 31 percent level 3; and 11 percent level 4). Papers were collected from 79 percent of total class sections: 46 percent at low collaboration levels (1 or 2), and 53 percent at higher collaboration levels (3 or 4). Of $N = 264$ total papers, we sampled $n = 151$, giving us a sample size with a 95 percent confidence level and a 5 percent margin of error. Differences at all three rubric areas were statistically significant between low collaboration and more strategic or systematic collaboration.⁴³

College D

CCL teaching librarians experienced the least programmatic involvement and IL buy-in at College D's first-year seminar series. This lack of engagement was largely because

the first-year program at College D does not have an official coordinator, combined with an institutional culture in which faculty classroom autonomy is paramount and closely guarded. Moreover, research-based assignments are less common among these seminars, making IL instruction not an obvious “sell” among faculty who focus on close readings and syllabus-based evidence. Despite a lack of program-level integration into the first-year foundations program, librarians still provide IL instruction to a handful of sections each year and work with administrators on an ongoing basis to produce greater levels of adoption among faculty.

In 2013–2014, librarians collaborated with 35 percent of first-year classes at College D. Due to collection difficulties, we obtained papers from only 10 percent of total sections ($N = 31$), all of which collaborated with librarians. The sample size was too small to break out collaboration levels, and therefore statistical significance in student performance differences could not be calculated between levels. Only aggregate scores are provided in Figure 5.

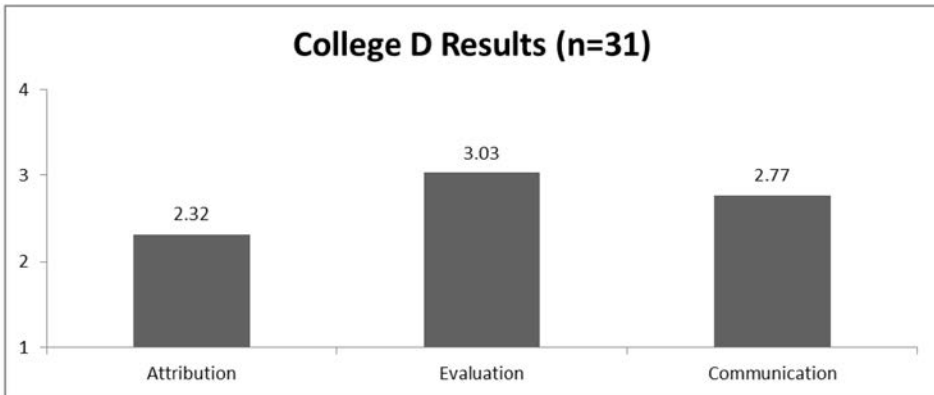


Figure 5. College D results

College E

College E's required first-year foundation program leads students through a structured series of assignments that support the development of research writing. Similar to College A and C, there is a culture of faculty autonomy. Due in part to a strong program coordinator, there is greater faculty willingness to engage in more meaningful collaborations with librarians than at College A and D. Subject liaison librarians and faculty have collaborated on an individual basis for many years, but in 2011–2012 the library began pairing a librarian with each section to more programmatically introduce students to the range of resources available through the library as well as to reinforce foundational principles in information literacy. In spring of 2013, librarians began attending annual course faculty meetings to describe productive faculty-librarian course collaboration scenarios and discuss how a CCL-developed information literacy rubric can inform evaluation of student research work.



In 2013–2014, librarians worked with 92 percent of classes from College E and received papers from 70 percent of sections. The majority of classes (54 percent) collaborated at a higher level (level 3), with the rest (38 percent) collaborating at a low level (typically one-shot workshops at level 2). The sample size ($n = 104$ of $N = 150$ total) gives a 95 percent confidence level with a 5 percent margin of error. The differences between all three rubric levels at the low and more strategic collaboration levels were statistically significant, and represent the widest performance gap in the study.⁴⁴

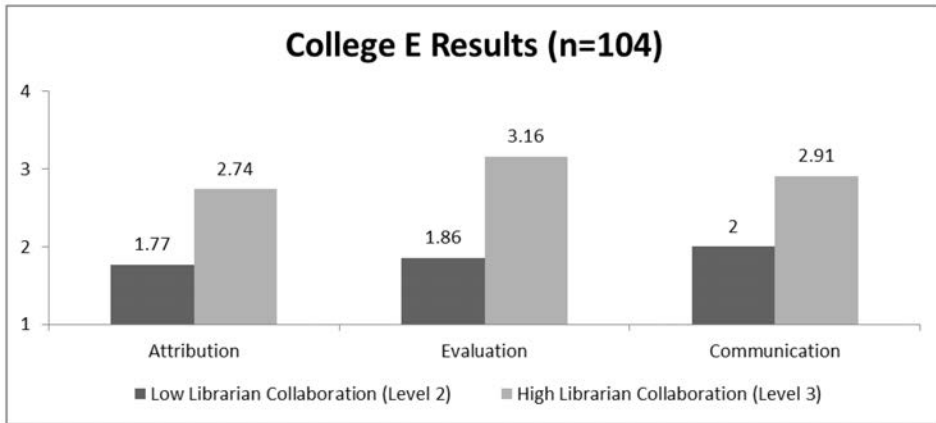


Figure 6. College E results

Conclusion

Instruction librarians experience varying levels of buy-in among faculty in many walks of course-integrated IL teaching practice. As a result, it is profoundly important to determine the student learning effects of varying levels of engagement to target our own efforts and advocate for effective course integration scenarios. In the context of the present research, it is important to note that a great deal of librarian pedagogical development underlies the IL instruction program at CCL. The program is committed

...librarians have a significant impact on first-year seminar students' IL learning through a strategic and faculty-supported combination of direct instruction and assignment design consultation.

to the consistent cultivation of a “community of practice” that encourages best practices, confidence in peer-to-peer collaboration with faculty, meaningful assessment, and consistency in engaging students with IL habits of mind reflected in our institutional definition of IL. These strategies are discussed at greater length in the publication of our pilot results.⁴⁵

Our findings strongly suggest that librarians have a significant impact on first-year seminar students' IL learning through a strategic and faculty-supported combination of direct instruction and assignment design consultation. Results also indicate



that the perceived effectiveness or importance of IL at the faculty seminar program coordinator level is essential to ensuring meaningful librarian integration into the course experience of students. The support of the coordinator further ensures librarian participation in the research assignment and course design process, which provides more tailored assignments and timely IL interventions over the course of the semester. Moreover, establishing an awareness of IL in a faculty development context supports the faculty's role in actively building students' IL skills independent of librarian engagement, an essential reinforcement strategy that results in consistent messaging and expectations in graded work.

Through librarian-faculty collaboration in course instruction as well as behind the scenes, meaningful IL partnerships at levels we have characterized as 3 or 4 can build a strong foundation for information literate learners in first-year experience programs such as those at the Claremont Colleges. Across five distinct undergraduate colleges, our results suggest the existence of an IL instruction "sweet spot" consisting of faculty-librarian assignment and syllabi collaboration at the beginning of a semester, one to two strategically placed workshops focused on specific IL habits of mind, and the integration of an online tutorial and quiz component. This combination tended to produce the greatest gain in students' IL skills. While the highest collaboration level (consisting of more than two face-to-face workshops) tended to result in slightly stronger student scores, these differences were not statistically significant. Not surprisingly, a traditional "one-shot" workshop disconnected from writing assignments and lacking syllabi or assignment collaboration did not build students' IL skills as effectively.

By directly establishing the impact of librarian seminar engagement on student IL learning, this research project has opened previously closed doors at the Claremont Colleges and produced deeper faculty-librarian collaborations through its unassailable demonstration of value. Results have been widely distributed to faculty and colleges' administration in the form of campus-specific reports and presentations, leading to a confirmation of assumed benefit on the part of some faculty and an incentive to participate among those who might previously have questioned the value of librarian seminar engagement. Moreover, by providing rigorous evidence of the effects of IL interventions, the study encouraged faculty who in the past have worked minimally with librarians to explore deeper partnerships.

For libraries seeking to develop a value proposition around information literacy instruction and the role of librarians in the cultivation of IL skills among students, this is a replicable and reliable research design that can be used in any context wherein authentic student work is available to librarians. The CCL IL rubric is consistently applied across the Claremont Colleges, both undergraduate and graduate, to evaluate capstone and graduate-level work in accreditation and nonaccreditation assessment contexts. Librarian Course Collaboration Levels can similarly be adapted to reflect local instructional cultures or adjusted to encompass no collaboration versus some collaboration.

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Appendix A

Information Literacy in Student Work Rubric – Claremont Colleges Library (Version 2013/14)

Learning outcome	Level of achievement			
	Highly developed 4	Developed 3	Emerging 2	Initial 1
Attribution	<p>Shows a sophisticated level of understanding for when and how to give attribution.</p> <ul style="list-style-type: none"> Documents sources consistently and completely. Uses in-text citation and notes correctly and consistently. Cites non-textual sources consistently. Names and labels figures and/or graphs clearly and completely. 	<p>Attribution indicates understanding of the rationale for and various mechanisms of citation.</p> <ul style="list-style-type: none"> Documents sources throughout with occasional errors or inconsistencies. Uses in-text citation and notes with occasional errors or inconsistencies. Cites non-textual sources with relative consistency. Usually names and labels figures and/or graphs clearly and completely. 	<p>Misssteps in attribution interfere with the argument or point to fundamental misunderstandings.</p> <ul style="list-style-type: none"> Frequently documents sources incorrectly or leaves out some citations. Frequent errors and inconsistencies with in-text citation and notes. Does not consistently cite non-textual sources. Names and labels figures and/or graphs inconsistently. 	<p>Use of evidence and citation is poor, making it difficult to evaluate the argument or sources.</p> <ul style="list-style-type: none"> Displays fundamental and consistent errors in source documentation. Does not include or contains significant inconsistencies with in-text citation and notes. Does not name, title, or cite non-textual sources. Does not name or label figures and/or graphs.

Appendix A. Continued

Learning outcome	Level of achievement			
	Highly developed 4	Developed 3	Emerging 2	Initial 1
Evaluation of sources	<p>Source materials employed demonstrate expertise and sophisticated independent thought.</p> <ul style="list-style-type: none"> • Demonstrates sophisticated awareness of universe of literature and community of scholarship. • Uses a variety of appropriate and authoritative sources. • Always distinguishes between types of sources (e.g., scholarly v. popular, fact v. opinion). • Demonstrates a thorough critical exploration and knowledge of evidence, theories, and sources selected. 	<p>Source materials are adequate and appropriate but lack variety or depth.</p> <ul style="list-style-type: none"> • Explores supporting sources and community of scholarship but might overlook important avenues. • Sources used support claim(s) but may not be the most authoritative source to make claim. • Usually distinguishes between types of sources (e.g., scholarly v. popular, fact v. opinion). • Demonstrates a preliminary critical exploration and knowledge of evidence, theories, and sources selected. 	<p>Source materials used are inadequate.</p> <ul style="list-style-type: none"> • Exhibits weak awareness of universe of literature or other sources that could strengthen claim(s) or argument(s). • Relies on too few or largely inappropriate sources. • Does not consistently distinguish between types of sources (e.g., primary v. secondary, scholarly v. popular, fact v. opinion). • Clearly selected sources out of convenience. • Demonstrates little critical exploration and knowledge of theories and sources selected. 	<p>Source materials are absent or do not contribute to claim(s) or argument(s).</p> <ul style="list-style-type: none"> • No evidence of awareness of universe of literature or other sources that could strengthen claim(s) or argument(s). • When included, sources are too few or badly inappropriate. • No distinction between types of sources (e.g., scholarly v. popular, fact v. opinion). • Does not explore outside sources or present evidence when called for. • No evidence of critical exploration and knowledge of theories and sources selected.



Communication of evidence

<i>Evidence is integrated and synthesized expertly to support claims.</i>	<i>Proficient synthesis and integration of evidence.</i>	<i>Weak attempts at synthesis or integration.</i>	<i>No evidence of attempt at synthesis or integration.</i>
<ul style="list-style-type: none"> Consistently presents evidence to support claim(s) and argument(s). Synthesizes and contextualizes evidence appropriately for audience. Uses evidence instrumentally toward rhetorical goals. Distinction between own ideas and ideas of others is consistently clear. Identifies gaps in the literature and contributes creatively and/or significantly to a scholarly conversation. Does not over- or under-rely on the ideas of others or the work of a single author. 	<ul style="list-style-type: none"> Generally employs evidence to support claim(s) and argument(s). May present some evidence without context. Frequently demonstrates using evidence instrumentally toward rhetorical goals. Distinction between own ideas and ideas of others is usually clear. Begins to identify gaps in the literature or contribute to a scholarly conversation. May over- or under-rely on the ideas of others or the work of a single author. 	<ul style="list-style-type: none"> Sparsely uses evidence to support claim(s) or argument(s). Frequently fails to put sources into context (e.g. "The World Bank says . . ."). Usually does not demonstrate using evidence instrumentally toward rhetorical goals. Consistently blurs distinction between own ideas and ideas of others. Does not identify gaps in the literature or contribute to a scholarly conversation. 	<ul style="list-style-type: none"> Claim(s) or argument(s) lack necessary evidence. Fails to contextualize quotes and evidence. No demonstration of using evidence instrumentally toward rhetorical goals. No distinction between own ideas and ideas of others.



Information Literacy in Student Work Rubric Scoring Sheet - Claremont Colleges Library

Identification

ID code _____ Reader name _____ Term/Year _____
Faculty _____

Could not evaluate information literacy (IL) in this work? Check the box and you're done.

Assignment

A. Does the assignment ask students to use evidence outside of assigned course content? *(check one)*

Required Allowed Discouraged No explicit mention Assignment not available N/A

B. This work is a: _____ (e.g., research paper, thesis, report, summary, argument, analysis, reflection, media project, other).

Quality of attribution, evaluation, and communication of IL (see rubric for details):

	Highly developed (4)	Developed (3)	Emerging (2)	Initial (1)	Comments	Totals
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Attribution

Evaluation of sources

Communication of evidence

OPTIONAL

This work is a particularly representative example of the following *(check any that apply)*:

- Very robust bibliography
- Egregious errors in bibliography, in-text citations, notes
- Clear and consistent citations
- Little or no attribution of non-textual elements
- Chose appropriate sources to support claims
- Inappropriate source(s) used to support claim
- Sources are well-integrated and synthesized
- Sources not integrated or synthesized (e.g., "patch writing" or excessive block quoting)
- Shows awareness of depth of scholarship in area
- Sources lack breadth or depth
- Over/Undercited claims
- Other _____



Elaboration (optional):

Information Literacy in Student Work Rubric/Scoring Sheet Codebook - Claremont Colleges Library

Identification

Fill out any available details regarding student work.

Can we evaluate information literacy in this work?

Even if no sources are cited or the assignment does not call for outside sources, student work may exhibit information literacy if the student is placing his or her ideas in a broader context using ideas or information from other sources.

Assignment

A. Expectations about use of evidence outside of assigned course reading or other materials provided by professor (use N/A in the case of thesis or other work without defined assignment parameters).

B. Assignment type allows us to determine how to evaluate works that fall outside the “standard” research paper (e.g., a report, thesis, summary, argument, analysis, reflection, media project, or other type of work).



Quality of attribution, evaluation, and communication of information literacy

For each category, check the appropriate box (highly developed, developed, emerging, initial).

- **Attribution** refers to how well and how consistently the student acknowledges sources of evidence, including nontraditional formats such as lectures, e-mails, DVD commentaries, and images/figures as well as non-textual, embodied, reflective, and experiential materials.
- **Evaluation** refers to the appropriateness or quality of source materials the students choose to use to support their rhetorical goals (claims or arguments). This includes materials and sources in their bibliography (if available) as well as those used throughout the work. Do the sources, examples, and evidence selected match the purpose of the type of work and argument the student is creating? Is the student aware of the differences between primary and secondary sources, popular and scholarly sources, or fact and opinion? Have the students selected the variety and quality of sources appropriate for their argument and work type?
- **Communication** refers to the use and integration of sources as well as the quality of composition, e.g., whether the students have integrated the evidence they're using and have done so in a way instrumental to their claim(s) and argument(s). Does the student paraphrase, summarize, synthesize, use quotes appropriately? Does the student frame quotations using authoritative sources? How are they using sources to ground their claims? This category also addresses how students integrate their own ideas with those of others.

OPTIONAL - This work is a particularly rich example of the following (check any that apply):

Check an item when the noted characteristics are present and should be flagged as interesting or rich examples for future analysis or conversation. If you see other rich examples, note them as "Other."

Rubric content adapted for the Claremont Colleges by Char Booth (char_booth@cuc.claremont.edu), Sara Lowe (sara_lowe@cuc.claremont.edu), Natalie Tagge (natalie_tagge@cuc.claremont.edu), and Sean Stone (sean_stone@uc.claremont.edu) from an instrument originally developed at Carleton College, Gould Library Reference and Instruction Department, "Information Literacy in Student Writing Rubric and Codebook" (Northfield, MN: Carleton College, 2012); <http://go.carleton.edu/6a>. This rubric version (2013/14) was revised Summer–Fall of 2013 and finalized September 2013.

Appendix B

Claremont Colleges Library First-Year Instruction Collaboration Levels

Information Literacy Steering Group, Spring 2014

Librarians can work in different ways with first-year classes based on a faculty member's input. The following are three examples of librarian collaboration scenarios:

Scenario 1 – Minimal Collaboration (corresponds to collaboration level 2)

- Librarian and faculty member meet prior to semester to discuss course needs.
- Faculty member lists librarian as an as-needed resource in syllabus.
- Librarian creates customized online research guide for class in consultation with faculty member, which faculty links to in the LMS [learning management system] course site.
- Librarian visits an early-term seminar to introduce self, describe library research support services, and demonstrate the online research guide; OR Faculty member assigns students to take the online Start Your Research tutorial and its companion library-created Sakai quiz for a modest participation grade.
- Faculty member refers students to course librarian or online library services as needed.

Scenario 2 – Average Collaboration (corresponds to collaboration level 3)

- Librarian and faculty member meet prior to semester to discuss course needs. There is a discussion of the syllabus and moderate assignment(s) design discussion.
- Faculty member lists librarian as an as-needed resource in syllabus.
- Librarian creates customized online research guide for class in consultation with faculty member; faculty member adds librarian as "instructor" in LMS course site so that librarian may link to the guide.
- Faculty assigns students to take the online Start Your Research tutorial and its companion library-created Sakai quiz for a modest participation grade.
- Class visits library for assignment-focused, hands-on research instruction session.
- Students schedule appointments with librarian as needed as they work on a research assignment.

Scenario 3 – Substantial Collaboration (corresponds to collaboration level 4)

- Librarian and faculty member meet prior to semester to discuss course needs; there is a discussion of the syllabus and significant assignment(s) design discussion.
- Faculty member lists librarian as an as-needed resource in syllabus.
- Librarian creates customized online research guide for class in consultation with faculty; faculty adds librarian as "instructor" to LMS course site so that librarian may link to the guide.



- Librarian visits an early-term seminar to introduce self and describe research support services.
- Faculty assigns students to take the online Start Your Research tutorial and its companion library-created Sakai quiz for a modest participation grade.
- Class visits library for two assignment-focused, hands-on research instruction sessions.
- Students schedule required appointments with librarian to discuss research assignment.
- Librarian provides feedback to each student on annotated bibliography or other assignment draft.

Notes

1. The library defines these “habits of mind” as inquiry, attribution, evaluation, communication, and insight: <http://libraries.claremont.edu/informationliteracy/>.
2. The Western Association of Schools and Colleges (WASC) redesigned core competencies are “written and oral communication, quantitative skills, critical thinking, and information literacy.” See <http://wascsenior.org/redesign/revised-draft-2013-handbook>.
3. Claremont Colleges Library, “First-Year Instruction Learning Outcomes,” http://libraries.claremont.edu/informationliteracy/documents/CCL_First-Year_Instruction_IL_Learning_Outcomes.pdf.
4. The Claremont Colleges, <http://www.claremont.edu/>.
5. Rubric Assessment of Information Literacy Skills (RAILS), <http://railsontrack.info/>.
6. Grant Wiggins, *Educative Assessment: Designing Assessments to Inform and Improve Student Performance* (San Francisco: Jossey-Bass, 1998), 153.
7. Megan Oakleaf, “Using Rubrics to Assess Information Literacy: An Examination of Methodology and Interrater Reliability,” *Journal of the American Society for Information Science and Technology* 60, 5 (May 2009): 969–83.
8. Ibid.; Megan Oakleaf, “Dangers and Opportunities: A Conceptual Map of Information Literacy Assessment Approaches,” *portal: Libraries and the Academy* 8, 3 (2008): 233–53, doi: 10.1353/pla.0.0011.
9. Lorrie A. Knight, “Using Rubrics to Assess Information Literacy,” *Reference Services Review* 34, 1 (February 2006): 43–55.
10. Lara Ursin, Elizabeth Blakesley Lindsay, and Corey M. Johnson, “Assessing Library Instruction in the Freshman Seminar: A Citation Analysis Study,” *Reference Services Review* 32, 3 (2004): 284–92.
11. Elizabeth Choinski, Amy E. Mark, and Missy Murphey, “Assessment with Rubrics: An Efficient and Objective Means of Assessing Student Outcomes in an Information Resources Class,” *portal: Libraries and the Academy* 3, 4 (October 2003): 563–75.
12. Ibid., 565.
13. Debra Hoffmann and Kristen LaBonte, “Meeting Information Literacy Outcomes: Partnering with Faculty to Create Effective Information Literacy Assessment,” *Journal of Information Literacy* 6, 2 (December 2012): 70–85.
14. Erin Daniels, “Using a Targeted Rubric to Deepen Direct Assessment of College Students’ Abilities to Evaluate the Credibility of Sources,” *College & Undergraduate Libraries* 17, 1 (January 2010): 31–43.
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17. Dorothy Anne Warner, "Programmatic Assessment of Information Literacy Skills Using Rubrics," *Journal on Excellence in College Teaching* 20, 1 (January 2009): 149–65.
18. Barbara J. D'Angelo, "Integrating and Assessing Information Competencies in a Gateway Course," *Reference Services Review* 29, 4 (2001): 282–93.
19. Magia G. Krause, "Undergraduates in the Archives: Using an Assessment Rubric to Measure Learning," *American Archivist* 73, 2 (Fall 2010): 507–34.
20. Smiti Gandhi, "Faculty-Librarian Collaboration to Assess the Effectiveness of a Five-Session Library Instruction Model," *Community & Junior College Libraries* 12, 4 (2005): 15–45.
21. Mark Emmons and Wanda Martin, "Engaging Conversation: Evaluating the Contribution of Library Instruction to the Quality of Student Research," *College and Research Libraries* 63, 6 (November 2002): 545–60.
22. Julie Gilbert, "Using Assessment Data to Investigate Library Instruction for First-Year Students," *Communications in Information Literacy* 3, 2 (September 2009): 181–92.
23. Molly R. Flaspohler, "Information Literacy Program Assessment: One Small College Takes the Big Plunge," *Reference Services Review* 31, 2 (2003): 129–40.
24. Michael R. Hearn, "Embedding a Librarian in the Classroom: An Intensive Information Literacy Model," *Reference Services Review* 33, 2 (2005): 219–27.
25. Swapna Kumar and Marilyn Ochoa, "Program-Integrated Information Literacy Instruction for Online Graduate Students," *Journal of Library & Information Services In Distance Learning* 6, 2 (April 2012): 67–78.
26. Yvonne Mery, Jill Newby, and Ke Peng, "Performance-Based Assessment in an Online Course: Comparing Different Types of Information Literacy Instruction," *portal: Libraries and the Academy* 12, 3 (July 2012): 283–98.
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28. Bonnie J. M. Swoger, "Closing the Assessment Loop Using Pre- and Post-Assessment," *Reference Services Review* 39, 2 (2011): 244–59.
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31. Christine Black, Sarah Crest, and Mary Volland, "Building a Successful Information Literacy Infrastructure on the Foundation of Librarian-Faculty Collaboration," *Research Strategies* 18, 3 (2001): 215–25.
32. Sue Samson and Kim Granath, "Reading, Writing, and Research: Added Value to University First-Year Experience Programs," *Reference Services Review* 32, 2 (2004): 149–56.
33. Char Booth, M. Sara Lowe, Natalie Tagge, and Sean M. Stone, "Degrees of Impact: Analyzing the Effects of Progressive Librarian Course Collaborations on Student Performance," *College & Research Libraries* (forthcoming).
34. Booth, Lowe, Tagge, and Stone in "Degrees of Impact" analyzed first-year seminar collaborations on two scales: Librarian Instruction Engagement Level (Lib) and Syllabus/Assignment Design Collaboration Level (Syl). That study found high degrees of consistency across these levels in individual librarian-course pairings, leading the authors to collapse the two scales into a single Course Engagement Level for the present study.
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37. Cohen's kappa, a measure of the degree of consistency between two raters, of 0.41–0.6 and 0.61–0.8.
38. Booth, Lowe, Tagge, and Stone, "Degrees of Impact," 12.
39. *P*-values between level 3 and level 4: attribution 0.458; evaluation 0.09; communication 0.06. (A *p*-value less than 0.05 indicates a high level of statistical significance.)
40. To maintain program anonymity, the total number of sections is not reported for any college.
41. *P*-values for low versus high librarian collaboration: attribution 0.050; evaluation 0.286; communication 0.014.
42. *P*-values for level 3 versus level 4 collaboration: attribution 0.130; evaluation 0.047; communication 0.270.
43. *P*-values for low (level 2) versus high (level 3 and 4) collaborations: attribution 0.011; evaluation 0.00002; communication 0.018.
44. *P*-values for low (level 2) versus high (level 3) collaborations: attribution 0.000000000313; evaluation 0.0000000000167; communication 0.000000000154.
45. Booth, Lowe, Tagge, and Stone, "Degrees of Impact."