

Project SAILS: Development, Results, and Use

By Carolyn Radcliff

Chair of Public Services, Leatherby Libraries at Chapman University

Information Literacy Librarian for Project SAILS and Carrick Enterprises

March 31, 2015

To be published as a portion of this paper:

Radcliff, Carolyn, Megan Oakleaf, and Michele Van Hoeck. "So What? The Results & Impact of a Decade of IMLS-Funded Information Literacy Assessments." In Proceedings of the 2014 Library Assessment Conference: Building Effective, Sustainable, Practical Assessment. Washington, D.C.: Association of Research Libraries, 2015. Forthcoming.

Project SAILS (Standardized Assessment of Information Literacy Skills) is a collaborative project offering a standardized test of information literacy knowledge. Begun in 2001, Project SAILS received substantial backing from several organizations, including a \$252,000 National Leadership Grant from the Institute of Museum and Library Services and \$50,000 from the Ohio Board of Regents. Kent State University, the Association of Research Libraries, and dozens of academic libraries in the U.S. and Canada provided additional support.¹ External funding was used throughout the four-year development phase for: development of a test item bank; expertise in measurement and programming; project staff and students; workshops; fellowships; and promotion and marketing.

The SAILS item bank has 155 multiple-choice questions based directly on objectives and outcomes in the ACRL Information Literacy Competency Standards for Higher Education (see the Project SAILS website for details - <http://www.projectsails.org>). Four of the five ACRL standards are covered. Multiple-choice was chosen as the form of assessment because it is a well-established testing method and is an efficient way to cover a large construct like information literacy. Well-written multiple choice items are versatile and assess at both lower-order and higher-order levels.²

Project SAILS uses the item bank in two information literacy assessments, one that gives scores for cohorts or groups of students, and one that give a score for each student. More than 160,000 students have taken a SAILS assessment. In spring 2014, the three-year benchmark for the SAILS cohort test has data from 61,099 students at 76 institutions.

Item reliability estimates for the cohort test are greater than .80. Validity was established by comparing SAILS scores with student SAT/ACT scores and with student scores on the Information Literacy Test developed at James Madison University.³ Details can be found on the Project SAILS web site.⁴

The cohort test is given to a group of students, with each student answering 45 randomly-selected items from the item bank. The cohort test gives results for the ACRL standards and for eight SAILS skill sets which were created by regrouping the ACRL objectives and outcomes. The report presents results for groups of students, including results by class standing, major, and optional custom questions, plus benchmark comparisons with groups of institutions. Table 1 shows overall information literacy scores for class standing by institution type, based on the three-year benchmark. The score is given along with the standard error, indicated with \pm . Standard error is the combination of sampling error and measurement error.

TABLE 1: Project SAILS Cohort Test Overall Information Literacy Scores - 2014

	Associates	Bachelors General	Bachelors Liberal Arts	Masters	Doctorate
Freshman	460 ± 5	469 ± 5	483 ± 4	485 ± 2	492 ± 2
Sophomore	491 ± 6	500 ± 12	505 ± 7	506 ± 4	506 ± 8
Junior		503 ± 18	512 ± 8	513 ± 4	516 ± 9
Senior		511 ± 15	529 ± 7	525 ± 5	539 ± 7

As you can see, information literacy scores go up as students progress through college. The institution type showing the highest performance is doctorate-granting institutions.

SAILS cohort test results are reported for each of eight skill sets, as mentioned above. The skill set scores are not directly comparable to each other. Instead, we can compare institution types and class standing on each skill set. The table below displays the scores on each of the eight SAILS skill sets. The score is given along with the standard error, indicated with ±.

TABLE 2: Project SAILS Cohort Test Scores on the Skill Sets - 2014

	Associates (n=11)	Bachelors – General (n=12)	Bachelors – Liberal Arts (n=17)	Masters (n=20)	Doctorate (n=16)
Developing a Research Strategy					
Freshman	452 ±3	486 ±2	505 ±2	499 ±1	497 ±1
Sophomore	486 ±3	508 ±2	507 ±3	502 ±2	509 ±4
Junior		513 ±2	512 ±3	525 ±2	518 ±4
Senior		518 ±1	541 ±2	527 ±2	530 ±3
Selecting Finding Tools					
Freshman	449 ±3	482 ±2	509 ±2	502 ±1	499 ±1
Sophomore	479 ±4	501 ±3	512 ±4	501 ±3	517 ±5
Junior		516 ±3	514 ±4	521 ±2	522 ±5
Senior		515 ±2	543 ±3	527 ±2	538 ±4
Searching					
Freshman	438 ±3	469 ±2	487 ±2	478 ±1	480 ±1
Sophomore	461 ±3	488 ±2	482 ±3	476 ±2	490 ±4
Junior		491 ±2	489 ±4	499 ±2	504 ±4
Senior		493 ±1	521 ±3	507 ±2	513 ±3
Using Finding Tool Features					
Freshman	487 ±4	517 ±2	529 ±3	524 ±1	523 ±2
Sophomore	511 ±5	536 ±3	534 ±5	528 ±3	535 ±6
Junior		544 ±3	538 ±5	544 ±3	558 ±6
Senior		545 ±2	569 ±3	551 ±3	562 ±4

Retrieving Sources					
Freshman	452 ±4	496 ±2	519 ±3	502 ±1	504 ±2
Sophomore	491 ±5	524 ±3	534 ±4	518 ±3	522 ±6
Junior		531 ±3	545 ±5	540 ±3	552 ±6
Senior		536 ±2	579 ±4	558 ±3	564 ±4
Evaluating Sources					
Freshman	432 ±3	460 ±2	473 ±2	473 ±1	471 ±1
Sophomore	453 ±4	479 ±3	468 ±4	472 ±3	479 ±5
Junior		484 ±3	479 ±4	496 ±2	498 ±5
Senior		491 ±2	510 ±3	504 ±2	507 ±3
Documenting Sources					
Freshman	412 ±4	428 ±2	464 ±3	455 ±1	465 ±2
Sophomore	433 ±5	463 ±3	473 ±5	465 ±3	481 ±6
Junior		471 ±3	488 ±6	497 ±3	495 ±7
Senior		479 ±2	548 ±4	505 ±3	528 ±4
Understanding Economic, Legal, and Social Issues					
Freshman	408 ±3	451 ±2	462 ±2	458 ±1	459 ±1
Sophomore	444 ±4	471 ±3	458 ±4	463 ±3	465 ±5
Junior		468 ±3	471 ±4	487 ±2	481 ±5
Senior		475 ±2	505 ±3	492 ±2	498 ±3

The data show that seniors do better on the test than freshmen. This is true for every skill set and for all four types of schools that have seniors. Differences range from an increase of 24 points to an increase of 84 points. Seniors also perform better than sophomores for all skill sets and all school types except Understanding Economic, Legal, and Social Issues at Bachelors – General institutions. Seniors outperform juniors in most instances. For associates schools, sophomores do better than freshmen on every skill set, with increases ranging from 21 to 39 points. The biggest gains are mostly in two skill sets, Retrieving Sources and Documenting Sources.

Taking the standard error into account, we can see which types of institutions perform better on the skill sets. Liberal arts schools had the most instances of having the highest score alone (see for example, freshmen on the first skill set, Developing a Research Strategy) and having the highest score along with another institution type (for example, on the second skill set, Selecting Finding Tools, sophomores at both liberal arts institutions and doctorate institutions scored equivalently).

In nearly all skill sets at nearly all levels, doctorate, masters, and bachelors–liberal arts schools scored higher than bachelor–general and associates schools. Students at liberal arts institutions scored consistently higher in the skill sets of Developing a Research Strategy; Searching; and Retrieving Sources.

As with all assessments, interpretation of results should occur within local context and environment. We expect to see the progression from freshmen to seniors, which leads to the question of how students are learning these skills. The SAILS test itself gives no information about how the learning occurs. It would be worth investigating the factors that lead to increased information literacy. Is it library instruction? Predictable student development and maturation? Learning from classroom faculty? Assignments? Parents? Friends? Trial and error? Without knowing more about the testing situation and the institutional

environments, we cannot answer these questions on a large scale. An institution that uses the Project SAILS assessments benefits from a careful and context-based interpretation of their results.

Use of the SAILS Tests

SAILS participants have varied and interesting reasons for using the SAILS assessments. Librarians and administrators have used the test to meet the need for quantitative assessment data both internally and for accreditation; to get a snapshot of overall information literacy levels; to establish baselines for first year students with plans to track their progress through their college careers; to identify weak areas that can be targeted through instruction; to make revisions to instruction programs; and to improve for-credit information literacy courses. SAILS has also been used as a way to jumpstart conversations with faculty and administrators about information literacy.

Two articles describe the use of the SAILS tests in more detail. Rumble and Noe describe the implementation of SAILS at Auburn University and subsequent successful collaboration with university stakeholders. Along with the Collegiate Learning Assessment, surveys and interviews, and anecdotal evidence, SAILS was a key factor in a major restructuring of a freshman composition course with a focus on information literacy skills.⁵ Lym, Grossman, Yannotta and Talih present results of a survey of SAILS participants with a focus on how institutions were able to make use of the SAILS results. The authors summarize the implication of their study as follows: “Results from this study suggest that SAILS can be most effective if there is statistical/institutional research support for data analysis, if the sampling method for selecting test takers is more rigorous, if SAILS is used in conjunction with other instruments, and if the SAILS data is correlated with other institutional data.”⁶

Caveats

It is important to note that the SAILS benchmark is not necessarily representative of college students in general. Institutions that participate in SAILS are self-selecting. In addition, each institution selects students to take the SAILS test and those students may not represent the institution’s student body. The assessment is almost always low-stakes in that a student’s performance is not tied to any outcome, such as a grade, that would affect that student’s college career. Low-stakes tests may result in low motivation to perform well and consequently the results may under-report students’ information literacy.

The SAILS tests provide just one perspective on information literacy levels of undergraduate students. The tests measure knowledge, which does not always correspond to demonstration of information literacy skills. Finally, the tests are based on the very broad construct of information literacy as operationalized by four of the five ACRL standards.

Conclusion

The SAILS assessments have provided an important tool for institutions that want to measure students’ information literacy. As the profession moves to a new approach for defining and understanding information literacy, developers of the SAILS tests are working toward a next generation assessment tool that marries the benefits of standardized testing with the sophisticated and multidimensional aspects of the Framework for Information Literacy in Higher Education.⁷ More information can be found at <https://thresholdachievement.com>.

Notes

1. Joseph A. Salem, Jr. and Carolyn J. Radcliff, "Using the SAILS Test to Assess Information Literacy" (paper presented at the Library Assessment Conference, Charlottesville, Virginia, September 25-27, 2009). http://www.projectsails.org/pubs/Using_SAILS_ARL_Charlottesville.pdf.
2. Cynthia J. Brame, Vanderbilt University Center for Teaching, "Writing Good Multiple Choice Test Questions." Accessed September 15, 2014. <http://cft.vanderbilt.edu/guides-sub-pages/writing-good-multiple-choice-test-questions/>; Susan M. Brookhart, *How to Assess Higher-order Thinking Skills in Your Classroom*. Alexandria, Va: ASCD, 2010.
3. For details about the JMU Information Literacy Test, see Lynn Cameron, Steven L. Wise, and Susan M. Lottridge, "The Development and Validation of the Information Literacy Test," *College & Research Libraries* 68, no. 3 (2007): 229-37 and James Madison University Center for Assessment and Research Studies, "Information Literacy Test (ILT)." Accessed September 15, 2014. http://www.jmu.edu/assessment/resources/prodserv/instruments_ilt.htm.
4. Project SAILS (Standardized Assessment of Information Literacy Skills), "Validity and Reliability of Our Assessment." Accessed September 15, 2014. <https://www.projectsails.org/Validity>.
5. Julie Rumble and Nancy Noe, "Project SAILS: Launching Information Literacy Assessment Across University Waters," *Technical Services Quarterly* 26 (2009): 287-298.
6. Brian Lym, Hal Grossman, Lauren Yannotta, and Makram Talih, "Assessing the Assessment: How Institutions Administered, Interpreted, and used SAILS," *Reference Services Review* 38, no. 1 (2010): 168-86.
7. Association of College and Research Libraries, "Framework for Information Literacy for Higher Education." Accessed September 15, 2014. <http://www.ala.org/acrl/standards/ilframework/>.