

2019 General Education Assessment: Information Literacy

I. The setting

The current standards and rubric for Information Literacy were recommended by faculty committee and approved by the General Education Committee in 2009. Since that time, the College has conducted three direct assessments of the College's Information Literacy education using either the Standardized Assessment of Information Literacy (SAILS) or the College's Information Literacy Rubric. In response to low scores on the first assessment in 2009, the College added ENGL 102 as a graduation requirement.

The previous three assessment reports were used when making decisions about how to assess information literacy in 2019. The SAILS Cohort test was selected as the assessment instrument due to

- the instrument's reliability and validity
- the results comparison with peer institutions offered and
- the richness of the data captured by custom questions.

The SAILS Cohort Test measures the information literacy knowledge of cohorts of students. Results for the College are reported by class standing, major, and custom demographic questions. The report also contains scores by class standing and major for a "peer cohort" of institutions that administered the SAILS assessment. The peer cohort was selected from a list of institutions by the staff of the Office of Assessment and Evaluation and is listed in Appendix C.

II. SAILS Assessment Structure

The measurement model used by SAILS for scoring is item response theory (IRT), specifically the one-parameter Rasch model. IRT calculates scores based on a combination of question difficulty and student performance. The process begins with merging data from all institutions into a benchmark file. Student responses to the questions on the test are then used to determine the difficulty level of each question. Once that determination is made, student responses are analyzed to determine an average score for each group (or cohort). Scores in the report are placed on a scale that ranges from 0 to 1000.

Using IRT, there is no interval scale; a score of 100 is not equivalent to answering 100% of the test items correctly. The value of the data lies in the comparison of scores between groups at the College and between the College and the peer cohort. Each item also has a unique measure of standard error. In this case, the standard error is calculated using a combination of two types of statistical error that account for the number of students who answered the question, the distribution of students who answered the item, the item itself, and random error.

The difference between two scores is considered "meaningful" when the ranges of standard error do not overlap. The difference between two scores is considered "significant" if it has been shown to be so in a pooled variance t-test where $p < .01$.

There are eight skills sets in SAILS. Like the College's Information Literacy definition and rubric, the skillsets are aligned to the Association of College and Research Libraries' (ACRL) Information Literacy Competency Standards for Higher Education, published in 2000. SAILS aligns to the ACRL as follows. ACRL Standard 4 is not appropriate for multiple choice assessment and is not included in SAILS.

ACRL Alignment	Sails Skillset
1. The information literate student determines the nature and extent of the information needed.	5.1 Developing a Research Strategy
2. The information literate student accesses needed information effectively and efficiently.	5.2 Selecting Finding Tools
2. The information literate student accesses needed information effectively and efficiently.	5.3 Searching
2. The information literate student accesses needed information effectively and efficiently.	5.4 Using Finding Tools Features
2. The information literate student accesses needed information effectively and efficiently.	5.5 Retrieving Sources
3. The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.	5.6 Evaluating Sources
5. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.	5.7 Documenting Sources
5. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.	5.8 Understanding Economic, Legal, and Social Issues

Student scores by skillset are found in Appendix A of this document. The College’s Information Literacy definition and rubric are found in Appendix B.

III. Research Questions

In early 2019, the Office of Assessment and Evaluation convened a working group composed of representatives from the library, English department faculty and administrators, and assessment staff. Together the group reviewed data from previous information literacy assessments and crafted custom questions for comparison between groups. The most important questions for the committee were:

1. **whether ENGL 102 students’ performance was comparable to peers on ACRL standards 1 and 3. These were the standards on which ENGL 102 students scored meaningfully lower than their peers on 2009, and on which they scored lowest on the rubric in 2014.**
2. **whether ENGL 102 added to students’ information literacy skills over ENGL 101;**
3. **whether having an information literacy session with library faculty added to students’ information literacy knowledge;**
4. **differences between course modality, e.g., online, in-person at the College’s main campus; in-person at one of the College’s regional campuses; and hybrid courses;**
5. **differences between majors; and**
6. **between racial and ethnic groups.**

The instrument was thus set up to capture possible differences in achievement between 2009 and 2019 as well as between groups in 2019.

IV. Implementation

Based on a total of 170 ENGL 101 and 102 sections offered Spring 2019, eight 20-25 student sections of ENGL 101 and eight similarly-sized sections of ENGL 102 were semi-randomly selected to administer the SAILS instrument. One section from all online sections was randomly selected; the one hybrid section offered Spring 2019 was included; one section each was randomly selected from the ENGL 101 and 102 sections offered at regional campuses; and the other four sections were randomly selected from the in-person sections at the main campus.

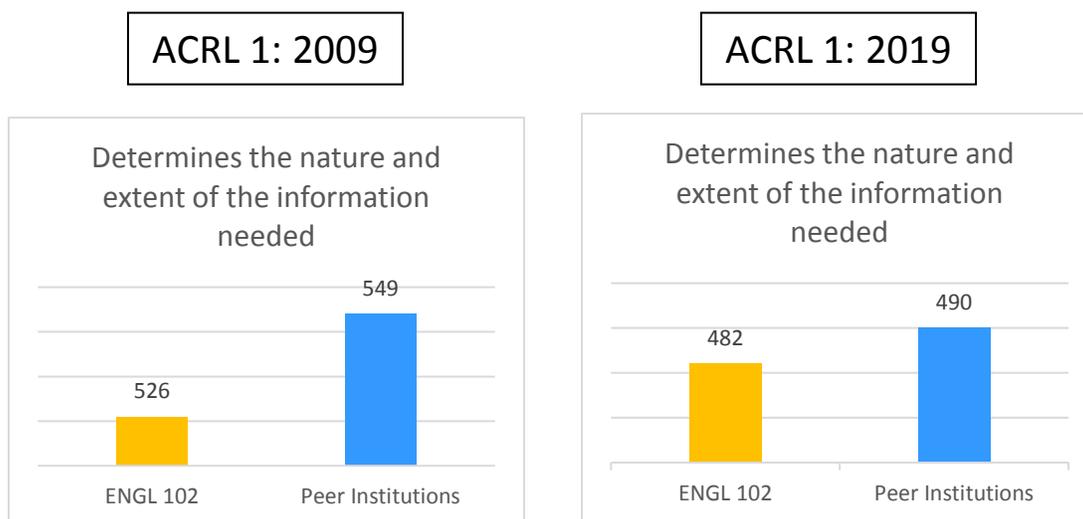
Faculty were informed of their section’s selection and given a two-week window in which to administer the instrument. The online and hybrid sections administered the assessment remotely. The in-person sections administered the assessment in-person, to best echo the learning and assessment environment of the sections themselves. All selected sections participated in the assessment.

V. Findings

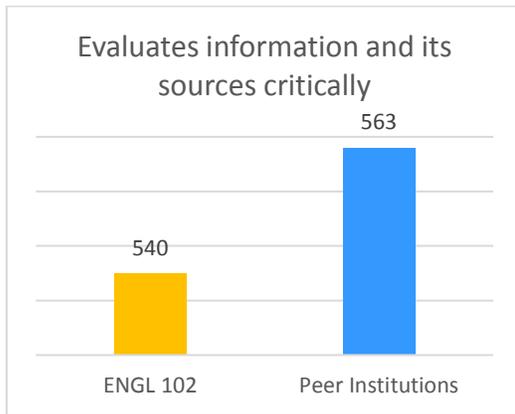
N=208 students total took the assessment; 96 students in ENGL 101 and 112 students in ENGL 102. SAILS delivered the results of the assessment according to the groups created by the questions outlined above. As one of the research questions was whether ENGL 102 meaningfully added to students’ skills over ENGL 101, many of the questions were answered by comparing ENGL 102 students with peers. Because the use of IRT eliminates the use of interval scales, the SAILS data expresses “meaningful differences” between groups. When two normed means plus or minus the standard error do not overlap with each other, the two groups are “meaningfully different.” OAE ran t-tests on some of the data to test for statistical significance. The purpose of the t-test is to remove the random error from the item’s standard error. This allows for a stronger statement of difference between groups.

1. Comparable with peer institutions on ACRL standards 1 and 3

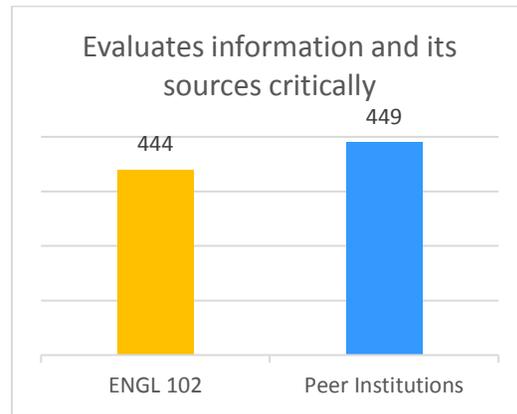
On past assessments, students at the College scored meaningfully lower than peer institutions on ACRL Standards 1 and 3. In 2019, ENGL 102 students’ scores on these ACRL standards were not meaningfully different from peer institutions. In reading the following graphs, attention should be paid to the size of the gap between ENGL 102 scores and peer institution scores, rather than the scores themselves.



ACRL 3: 2009

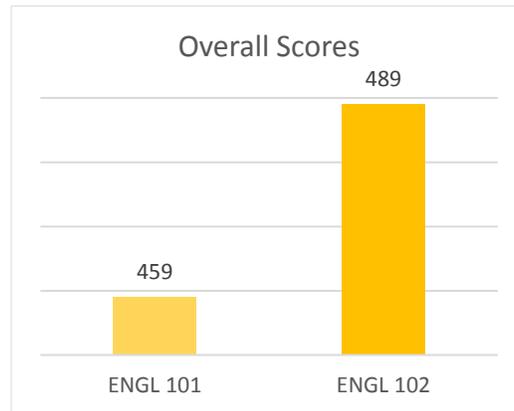


ACRL 3: 2019



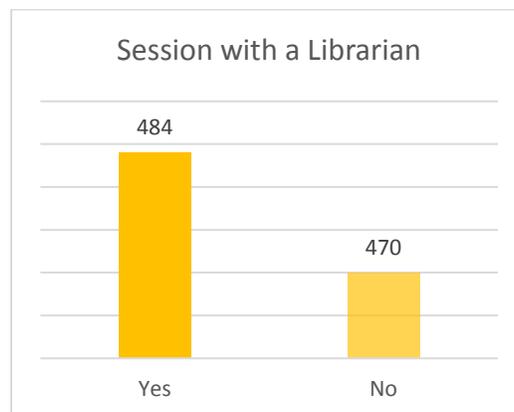
2. ENGL 101 compared to ENGL 102

Students in ENGL 102 scored significantly higher than students in ENGL 101 overall ($t(206) = 3.51, p < .01$).



3. Librarian Session

The mean scores for students who had a session with a librarian were meaningfully higher than students who did not have a librarian session ($t(206) = 3.51, p > .05$).



4. Location/Mode

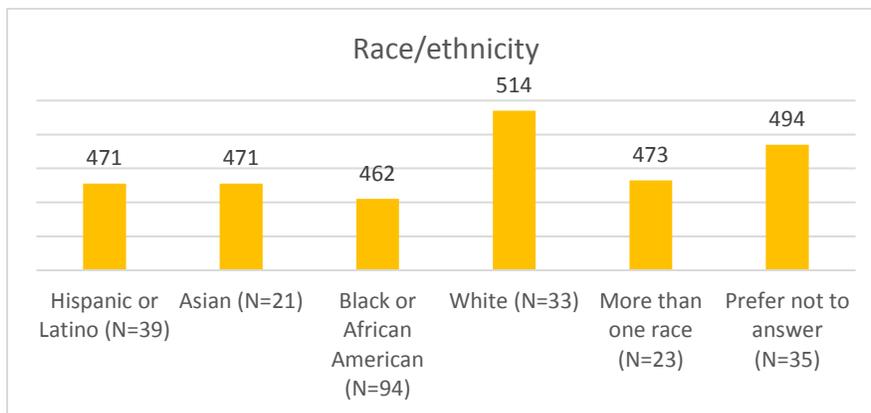
Students taking the course in person at the main campus scored meaningfully better than students taking the course in-person at a regional center. There were not enough students who took the course solely online to create a mean. The standard error for hybrid courses was too high to draw a meaningful comparison. The College is advised to use a larger sample in the future to discern differences between locations and modes of delivery.

5. Between majors at CCP

In discussions with faculty it was noted that students sometimes self-report as a major they have not formally declared or been accepted into. Due to this confounding variable, as well as low rates of response by major, we were unable to draw conclusions regarding this comparison. Future assessments of Information Literacy may wish to select students based on the number of credits they have earned, in order to increase the likelihood that students have been formally entered into the major.

6. By race/ethnicity

Students who identified as White scored higher than students of all other races. However, the proportion of White students in the selected ENGL 102 sections (17.6%) was higher than the proportion of White students in the selected 101 sections (12.8%). As we are unable to split the data by race and ENGL 101 vs ENGL 102 enrollment, the results of this question are confounded.

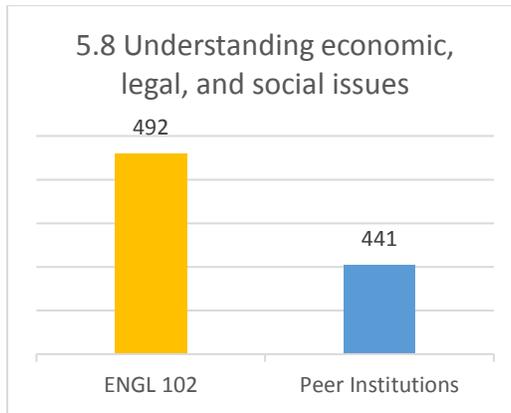


VI. Additional findings

In addition to the answers to the focus questions, the assessment indicated higher scores on one skill set and lower scores on another.

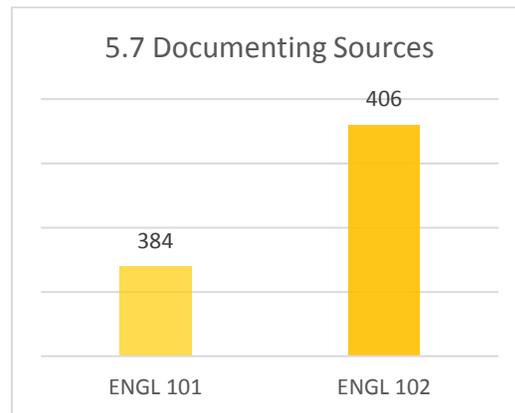
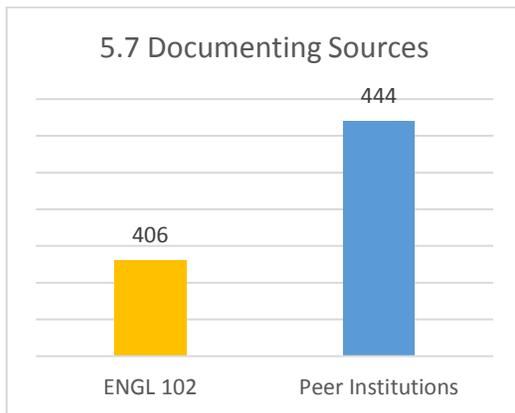
7. ENGL 102 students scored meaningfully higher than peers on SAILS skillset 5.8.

ENGL 102 students scored meaningfully higher than their peers on the SAILS skillset “Understanding Economic, Legal, and Social Issues.”



8. ENGL 102 students scored meaningfully lower than peers on SAILS skillset 5.7.

ENGL 102 students scored meaningfully lower than their peers in the skillset “Documenting Sources.” ENGL 102 students did not score meaningfully higher than ENGL 101 students in this skillset.



V. Other Evidence

9. Community College Survey of Student Engagement

In Spring 2019 the College participated in the Community College Survey of Student Engagement. Several questions on the survey elicited responses related to the Information Literacy assessment, and provide supporting evidence for the direct assessment used. The survey uses a 0-3 scale.

Related to the question of whether information literacy sessions with library faculty improve information literacy ability, CCP students responded to the question “How often have you used [library resources and services] in the past year?” with a mean of 1.56, indicating that students averaged between one and two library visits in the past year. This provides supporting evidence that students utilize the library, but does not provide direct evidence that students are engaging with library faculty for guidance.

Related to the skill of Evaluating Sources, students indicated they had “worked on a paper or project that required integrating ideas or information from various sources” with a mean of 2.83 where a 2 was “Sometimes” and a 3 was “Often.” This provides supporting evidence that faculty assign papers or projects that require students to incorporate selected information from various sources, which is part of

ACRL Standard 3. Students averaged a 2.70 on time spent on class assignments “Making judgements about the value or soundness of information, arguments, or methods” where a 2 was “Sometimes” and a 3 was “Often.” This provides supporting evidence that faculty assign work that requires students to evaluate sources, also a part of ACRL Standard 3.

10. Other College General Education Standards

One of the College’s General Education Technological Competency standards is “Graduates will be able to use library information systems.” Performance on that standard declined from 2013-2017. However, SAILS assesses a similar skillset, “Using Finding Tool Features.” On this skillset ENGL 102 students scored meaningfully higher than their peers. The Technological Competency standards have since been revised and no longer include library information systems specifically.

One of the College’s General Education Effective Communication standards is “Citation: Documents sources of information using the accepted form.” When Effective Communication was assessed in 2010 and 2014, Citation was among the lowest scores each time. SAILS assesses a similar skillset, “Documenting Sources.” On this skillset ENGL 102 students scored meaningfully lower than their peers.

IV. Recommendations

1. Encourage students to take ENGL 102 early in their academic career.

Students should be encouraged to take ENGL 102 as early as possible after ENGL 101, so that they can utilize their Information Literacy skills in other courses and life events that require research, critical consumption of information, identifying reliable sources, and other information literacy skills.

2. Continue to offer library sessions and seek broader opportunities for library session impact.

The assessment affirms the positive impact of an Information Literacy session with a librarian. Library faculty should investigate ways to make an impact on other Information Literacy Skills, especially Documenting Sources.

3. Research and implement strategies for creating equity among students of color and students who identified as White.

Pursuant to the College’s current focus on equity, faculty should research and implement strategies to achieve equity in information literacy skills between groups of students who identify as African American, Latinx/Hispanic, Asian, and White.

4. Implement a plan to address students’ continued deficiency in Documenting Sources

Students continue to perform below peers in “Documenting Sources/Uses information ethically and legally.” The College should create and implement a plan to improve students’ ability to correctly and appropriately document sources.

5. Update the Information Literacy General Education Definition and Rubric

In 2015, the ACRL stopped supporting the standards to which the College’s Information Literacy definition and rubric are aligned. The ACRL issued a new set of standards, which includes dispositions. As this is a significant shift based on updated research on information literacy, the College should revise its standards to align with supported standards and dispositions.

Further, 21st Century Information Literacy Skills and 21st Century Technological Competency Skills overlap in some areas. Revision of Information Literacy Requirements and Technological Competency Requirements should take each other into account to ensure that mastery of the subjects is clearly defined.

Appendix A

A1. Scores for ENGL 101, ENGL 102, and peer institutions by SAILS skill set. Green indicates meaningful difference.

Sails Skill Set	ACRL Alignment	ENGL 101 (N=96)	ENGL 102 (N=112)	Peer Institutions
5.1 Developing a Research Strategy	1. The information literate student determines the nature and extent of the information needed.	464 +-11	490 +-11	486+-3
5.2 Selecting Finding Tools	2. The information literate student accesses needed information effectively and efficiently.	430 +- 15	496 +-15	489+-3
5.3 Searching	2. The information literate student accesses needed information effectively and efficiently.	429+-11	466+-14	457+-3
5.4 Using Finding Tools Features	2. The information literate student accesses needed information effectively and efficiently.	427+-19	555+-19	525+-4
5.5 Retrieving Sources	2. The information literate student accesses needed information effectively and efficiently.	459+-20	509+-17	482--12
5.6 Evaluating Sources	3. The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.	422+-14	447+-13	441+-3
5.7 Documenting Sources	4. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.	384+-17	406+-18	444+-4
5.8 Understanding Economic, Legal, and Social Issues	4. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.	420+-16	492+-15	441+-3

A2: Scores by SAILS skill set for librarian/no librarian. Green indicates meaningful difference.

Sails Skill Set	ACRL Alignment	Yes session w/ librarian (N=76)	No session with librarian (N=132)
Overall Score		484 +-7	470 +-6
5.1 Developing a Research Strategy	1. The information literate student determines the nature and extent of the information needed.	495 +-12	469 +-10
5.2 Selecting Finding Tools	2. The information literate student accesses needed information effectively and efficiently.	479+-19	459 +-13
5.3 Searching	2. The information literate student accesses needed information effectively and efficiently.	466+-16	439+-11
5.4 Using Finding Tools Features	2. The information literate student accesses needed information effectively and efficiently.	509+-24	492+-18
5.5 Retrieving Sources	2. The information literate student accesses needed information effectively and efficiently.	495+-21	482+-16
5.6 Evaluating Sources	3. The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.	444+-16	431+-12
5.7 Documenting Sources	5. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.	410+-21	387+-16
5.8 Understanding Economic, Legal, and Social Issues	5. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.	470+-17	452+-15

Appendix B: Community College of Philadelphia Information Literacy Definition and Rubric

Information Literacy is defined as the ability to determine the extent of a need for information, access it effectively and efficiently, evaluate it critically, incorporate the information into a knowledge base, accomplish a specific purpose with it, and access and use this information ethically and legally. Information literacy includes proficiency in acquisition (finding, assessing, and utilizing repositories of information, both traditional and electronic) and integration (critically evaluating, digesting and synthesizing information from disparate sources).

Information Literacy Skill	Beginning	Developing	Competent	Accomplished
Project rests on a framed research question (ACRL 1.1--1.4)	Student did not formulate focused research question	Student formulated a basic research question	Student formulated a focused research question which demonstrated a clear understanding of topic	Student formulated a fully developed research question that showed an excellent understanding of topic
	Student had an unclear idea of breadth and depth of topic and information needed	Student had basic idea of breadth and depth of topic and information needed	Student had a clear idea of breadth and depth of topic and information needed	Student had a well-developed idea of breadth and depth of topic and information needed, and modified the topic accordingly
Sources located, searched and selected for this project are within the proper scope (ACRL 1.2; 2.2)	Student had an unclear understanding of appropriate keywords	Student had a basic understanding of appropriate keywords	Student had a clear understanding of appropriate keywords	Student had excellent understanding of appropriate keywords
	Student used inappropriate tools and unclear search strategy to find information	Student used a few appropriate search tools and had a basic search strategy	Student used search tools effectively and had a clear and focused search strategy	Student used multiple search strategies to find the best sources for the topic
	Student identified few or no relevant information sources	Student found a limited number or limited variety of relevant source	Student found a variety of information sources that directly fill the information need	Student's source selection exceeded expectations and the required number of sources
Project reflects student efforts to evaluate sources critically (ACRL 3.1-- 3.7)	Student showed no effort to judge credibility, relevance, accuracy or timeliness of information	Student showed some effort to judge credibility, relevance, accuracy or timeliness of information	Student evaluated the information for credibility, relevance, accuracy and timeliness	Student thoroughly evaluated the information for credibility, relevance, accuracy, timeliness, bias and context
	Student uncritically accepted all information found	Student made limited judgments about what to keep and what to discard	Student made generally good judgments about what to keep and what to discard	Student made thoughtful judgments about what to keep and what to discard
	Student made no effort to use diverse sources or formats	Student made some effort to use diverse sources and/or formats	Student compared diverse and appropriate sources and formats	Student compared a wide variety of diverse and appropriate sources/ formats

	Information used did not match criteria specified for project	Information used somewhat matched criteria specified for project	Information used matched criteria specified for project	Information used exceeded criteria specified for project
Final product shows evidence of accomplishing the objectives of research project	Student showed no evidence of grasping information literacy concepts or skills	Information used reflects grasp of most of information literacy concepts and skills	Information used suggests ability to find and evaluate information from a variety of sources	Information used suggests excellent command of finding and evaluating information from a variety of sources
(ACRL 4.1—4.3)	Student did not integrate new knowledge into existing knowledge base	Student integrated some new knowledge into existing knowledge base	Student integrated significant new knowledge into existing knowledge base	Student extensively integrated new knowledge into existing knowledge base
	Student did not successfully communicate ideas to others	Student communicated limited ideas to others	Student effectively communicated ideas to others	Student showed excellent ability and effort to communicate ideas to others
	Student did not accomplish objectives of research project	Student met minimum expectations for research project	Student effectively accomplished all the objectives of the research project	Student exceeded all the objectives of the research project
Sources were used ethically and appropriately and facilitate tracing to original information	Student provided inadequate, incorrect or no citation for others' ideas	Student cited information with mistakes regarding proper format	Student created a bibliography or works cited page using appropriate citation style	Student created a meticulous bibliography or works cited page using appropriate citation style
(ACRL 5.1—5-3)	Student work reflects lack of awareness of what plagiarism means	Student work shows acceptable understanding of plagiarism rules	Student created a bibliography or works cited page containing required number of sources	Student showed excellent understanding of plagiarism and strategies for avoiding plagiarism and recognizes examples of plagiarism
	Student did not create a workable bibliography or works cited page	Student created a bibliography or works cited page that contained just a few sources	Student showed thorough understanding of plagiarism, strategies for avoiding plagiarism and recognizes examples of plagiarism	Student created a bibliography or works cited page exceeding the required number of sources.
Self-Assessment	Student was unable to identify major strengths and weaknesses in work	Student attempted to identify strengths and weaknesses in work	Student identified strengths and weaknesses in work	Student self-identified strengths and weaknesses and made efforts to improve

Student did not seek
and/or resisted
instructor feedback on
work

Student did not resist
instructor feedback to
improve work

Student sought
instructor assistance
when needed to
improve work

Student used
instructor feedback to
increase self-
awareness, improve
overall research
methods and enhance
student learning

Appendix C: List of Selected Peer Institutions

Institution Name	Country	Institution Type(s)
Butler County Community College	US	Associates
Glendale Community College	US	Associates
Harrisburg University of Science and Technology	US	Masters
Kaiser Permanente School of Allied Health Sciences	US	Baccalaureate - General
Manchester Community College	US	Associates
Pennsylvania College of Technology	US	Baccalaureate - General
River Parishes Community College	US	Associates
Seward County Community College and Area Technical School	US	Associates
Valencia Community College	US	Associates
Wor-Wic Community College	US	Associates

***Peer institutions were selected based on similarity to Community College of Philadelphia in size, location, and demographic makeup. The baccalaureate and master’s granting institutions listed above administered the assessment within the first two years’ of students’ study.**