Annual Assessment Report for 2022-2023 Academic Year

Provide detailed responses for each of the following questions within this word document. Please do NOT insert an index or add formatting.

College/Program: Fresno State Library
Assessment Coordinator: Sarah McDaniel

1. Please list the learning outcomes you assessed this year:

In 2020, the Fresno State Library articulated Program Learning Outcomes (PLOs) and associated Student Learning Outcomes (SLOs) grounded in the "Framework for Information Literacy in Higher Education" (Association of College and Research Libraries, 2015). The Library's Student Outcomes Assessment Plan (SOAP, rev. 2022) reschedules SLO assessments that could not be completed during the pandemic, ensuring that all PLOs and SLOs will be assessed by 2026.

For that reason, this year's report is long, thanks for your patience!

In 2022/3, we assessed PLO 1, SLOs 1.1-1.4.

PLO 1: Students will be able to plan, manage, execute, and adapt search strategies in order to explore topics and meet information needs. SLOs 1.1-1.4:

>   1.1 Students will select search tools (databases, search engines, etc.) according to their information needs and for specific information tasks.

>   1.2 Students will use vocabulary appropriate to the search tool for effective initial and advanced searches.

>   1.3 Students will use a research question to plan a search, including selecting information sources, determining keywords and retrieval techniques, and establishing an appropriate research scope.

>   1.4 Students will demonstrate resilience in performing searches in order to alter search strategies based on results.

2. What assignment or survey did you use to assess the outcomes and what method (criteria or rubric) did you use to evaluate the assignment? Please describe the assignment and the criteria or rubric used to evaluate the assignment in detail and, if possible, include copies of the assignment and criteria/rubric at the end of this report.

The Library employed two assessment strategies, both discussed throughout the report. The SLOs were assessed through the following strategies described in greater detail below.

SLO 1.1   Canvas Badging Tutorials: *Credible Sources* and *Evaluating Sources*

SLOs 1.2-1.4   Searching Observational Study: Vocabulary (1.2), Strategy (1.3, and Resilience (1.4)

SLO 1.1: *Credible Sources* and *Evaluating Sources* Canvas Badging Tutorials

The ***Credible Sources*** and ***Evaluating Sources*** badging tutorials are online tutorials built in Canvas.

The curriculum of the ***Credible Sources*** badging tutorial consists of textual and video-based materials intended to inform students on how we grant credibility and how the context of an information need impacts how we grant credibility. The tutorial includes: definitions of key terminology; what students need to know about credible sources; how do we grant credibility; and context & credibility. At the completion of the assessment, students who score 9/9 or 100% earn the Credible Sources Badge. See ***Appendix A1*** for the tutorial transcript and assessment.

The curriculum of the ***Evaluating Sources*** badging tutorial consists of textual and video-based materials intended to inform students on how to evaluate and select sources based on the context in which they will be used. The tutorial also includes a list of key terms and a section on what students need to know about evaluating sources. At the completion of the assessment, students who score 7/7 or 100% earn the Evaluating Sources Badge. See ***Appendix A2*** for the tutorial transcript and assessment.

Assessment questions aligning to SLO 1.1 were selected from each tutorial to include in the analysis and other questions were excluded. Two questions were selected from the ***Credible Sources*** tutorial and four questions were selected from the ***Evaluating Sources*** tutorial.

SLOs 1.2-1.4: Searching Observational Study

The library recruited fifty undergraduate students to participate in an in-person, facilitator-guided observational assessment. Students completed a brief questionnaire (***Appendix B1***) with self-reported demographic data, confidence, and prior use of library services (e.g., library instruction). The verso of the worksheet presented a research scenario with a choice of research topics, and students were asked to make planning notes for a search for published sources using the library catalog and discovery tool, OneSearch.

A Library staff facilitator led each student through an exercise to execute and modify their search strategy to find useful search results. During the search, the facilitator prompted them to describe their thought process and search strategy. At the end of fifteen minutes, the student responded verbally to an open-ended question: "what is the most challenging thing about the search process?". Each student's session was recorded using Zoom video conferencing software, which records voice; computer screen (keystrokes, clicks, results); and a searchable transcript. The computer camera was deliberately disabled because students' facial reactions were not part of the study, to avoid potential rater bias, and because many students prefer not to be video recorded. Each student was assigned a unique identifier so that identifying information such as Student ID numbers could be managed securely.

Students' search notes (worksheets) and search recordings were scored with a rubric to determine proficiency in three dimensions: vocabulary (SLO 1.2), strategy (SLO 1.3) and resilience (SLO 1.4). Volunteer raters (librarians and other library staff) attended a one-hour training and norming session. During the session, the Assessment Coordinator described the purpose of the study, the importance of student anonymity, and how to rate student worksheets and recordings using the rubric. During the session, raters reviewed a sample assessment (worksheet and recording) together to come to consensus on ratings, and recommended minor revisions to the rubric. Two raters were assigned to review each assessment, assigned scores using the rubric, and submitted scores via a Google Form. After one month,

the Assessment Coordinator reviewed scores: if there was a difference of two points (of a total nine possible points) between the two raters, a third rater was assigned and only the closest two scores were retained.

A mean of the two closest ratings was calculated for each dimension of the rubric, and those final ratings were remitted to the Office of Institutional Excellence (OIE). OIE provided a statistical analysis of proficiency: overall and along key demographic variables: first-generation, sex, and URM. These variables (we later added Pell Eligibility) will be used for future assessment projects to identify gaps that can be addressed in our Justice, Equity, Diversity, and Inclusion (JEDI) assessment strategy.

3. What did you learn from your analysis of the data? Please include sample size (how many students were evaluated) and indicate how many students (number or percentage instead of a median or mean) were designated as proficient. Also indicate your benchmark (e.g. 80% of students will be designated as proficient or higher) and indicate the number of students who met that benchmark.

The library previously established a proficiency benchmark of 70% for all assessments. Areas where fewer than 70% of students were designated as proficient are indicated in red and demographic categories where there was a statistically significant difference in proficiency levels are indicated in blue.

Canvas Badging Tutorials: Credible Sources and Evaluating Sources

Table 1.1: Summary

Credible Sources (2 Questions)	Evaluating Sources Tutorial (4 Questions)
Sample Size: 1865	Sample Size: 1377
Proficiency: 69%	Proficiency: 60%
Average Attempts*: 3.8	Average Attempts 7.6

In the original design of the Canvas badging tutorials, students were allowed only two attempts per assessment. This created logistical problems: when many faculty across campus assigned students to "pass" each assessment, students who failed to pass in two attempts contacted the library, frequently frantic, after hours, and on short notice. A librarian then manually reset that student's attempts in Canvas. The assessments were intended to be low-stakes (after all, the goal was for students to attain and demonstrate proficiency), yet some faculty failed students for the semester if they did not pass. Unfortunately, students' multiple attempts complicate the data picture.

OIE provided the following analysis of proficiency for key demographic variables.

Table 1.2 - Credible Sources Badging Tutorial (2 Questions) - Proficiency

		Q1 % Proficient	Q1 Significant Difference (.05)	Q2 % Proficient	Q2 Significant Difference (.05)
All Students (n = 1865)		77%	N/A	60%	N/A
First Generation	Yes	77%	No	60%	No
	No	77%	No	59%	No
Sex	Female	76%	No	59%	No
	Male	78%	No	61%	No
Historically Under-represented Students (URM)	Yes	75%	Yes	58%	Yes
	No	80%	Yes	63%	Yes
Pell Eligible	Yes	75%	No	59%	No
	No	79%	No	60%	No

Table 1.3 Search Tools - Evaluating Sources Badging Tutorial (4 Questions) - Proficiency

		Q1 % Proficient	Q1 Significant Difference (.05)	Q2 % Proficient	Q2 Significant Difference (.05)	Q3 % Proficient	Q3 Significant Difference (.05)	Q4 % Proficient	Q4 Significant Difference (.05)
All Students (n = 1377)		59%	N/A	56%	N/A	72%	N/A	52%	N/A
First Gen	Yes	56%	Yes	54%	Yes	71%	No	49%	Yes
	No	66%	Yes	60%	Yes	75%	No	57%	Yes
Sex	Female	50%	Yes	48%	Yes	69%	Yes	43%	Yes
	Male	73%	Yes	69%	Yes	78%	Yes	64%	Yes
(URM)	Yes	57%	Yes	54%	Yes	72%	No	49%	Yes
	No	64%	Yes	59%	Yes	73%	No	56%	Yes
Pell Eligible	Yes	75%	Yes	54%	Yes	71%	Yes	49%	Yes
	No	79%	Yes	60	Yes	75%	Yes	56%	Yes

<u>Searching Observational Study</u>

Sample Size: The sample size was 47 (50 students participated, and three assessments were excluded because of technology issues or ineligible SIDs). The study was conducted in-person during a three-day period. The opportunity to participate was advertised via digital signage, flyers, website and social media, as well as via emails to students. Library Administration provided a $500 budget so that each student could receive a $10 Starbucks gift card. The administration required significant staff time per student (one hour for facilitator and raters). Students were recruited on a first-come, first-served basis, so the sample was random, however, OIE used students' demographic data to develop a statistically sound analysis. From speaking with students, we concluded that clear communications addressing incentive, purpose, time commitment, and anonymity motivated students to participate. Throughout, we communicated the library's enthusiasm for working directly with students to inform improvements.

Proficiency: 84% of students demonstrated proficiency with vocabulary, 78% demonstrated proficiency with search strategy, and 80% demonstrated proficiency in resilience. So we exceeded the benchmarks. OIE provided the following analysis of proficiency overall and by key demographic variables.

Table 2. Search Strategy - Proficiency (SLOs 1.2, 1.3, 1.4)

SLO 1.2 Vocabulary			
		Percentage Proficient	**Significant Difference (.05)**
All Students (n = 49)		84%	N/A
First Generation	Yes	79%	Yes
	No	92%	Yes
Sex	Female	86%	No
	Male	73%	No
Historically Under-represented Students (URM)	Yes	74%	Yes
	No	93%	Yes

SLO 1.3 Strategy

		Percentage Proficient	Significant Difference (.05)
All Students (n = 49)		78%	N/A
First Generation	Yes	79%	No
	No	67%	No
Sex	Female	77%	No
	Male	73%	No
Historically Under-represented Students (URM)	Yes	70%	Yes
	No	86%	Yes

SLO 1.4 Resilience

		Percentage Proficient	Significant Difference (.05)
All Students (n = 49)		80%	N/A
First Generation	Yes	76%	Yes
	No	92%	Yes
Sex	Female	77%	Yes
	Male	91%	Yes
Historically Under-represented Students (URM)	Yes	74%	Yes
	No	93%	Yes

Discussion for all assessments:

We hypothesized in designing our assessment studies that there would be significant differences between demographic groups, and that some of these differences would be based on lack of equity in educational opportunity. Information literacy education and development occur throughout students' lives and require access to libraries, librarians, teachers, learning materials, etc. A significant proportion of California schools are not resourced to provide school librarians, libraries, computers, etc. In addition, larger class sizes preclude the research experiences that build information literacy skills. Many communities cannot provide these resources for independent learners, either. In college, our students encounter research opportunities at different points in the curriculum. Next year, we intend to look at capstone-level research papers to determine if our students graduate with the information literacy skills they need.

This year's assessments revealed significant challenges with some learning outcomes related to searching for all students, as well as gaps between students in different demographic groups.

1. All the assessments focused on PLO 1: students' ability to "plan, manage, execute, and adapt search strategies in order to explore topics and meet information needs." Within PLO 1, proficiency levels were lower for students' ability to "select search tools … according to their information needs and for specific information tasks" (SLO 1.1), with students below benchmark for five of the six assessment questions included. For search vocabulary, strategy and resilience (SLOs 1.2-1.4), students were overall above the benchmark for all the dimensions studied.
2. These differences in proficiency levels may be partially attributable to the differing design of the assessments. For SLO 1.1, the Canvas-based quizzes were not scored on a gradient: responses were either correct or incorrect. For SLOs 1.2-1.4, the facilitator used predetermined prompts to direct the assessment exercise, then a rater used a rubric to score searches on a gradient (developing, proficient, or advanced) for each dimension. The observational study design may have allowed more students to demonstrate proficiency. The Canvas-based design is more scalable and sustainable, and the one-time observational study relied on significant resources.
3. The nature of the four SLOs related to searching varies: SLO 1.1 requires more specific knowledge of information sources and contexts related to academic research. SLOs 1.1, 1.4, and to a lesser extent SLO 1.3 address skills that are more easily transferable from searching standard search engines. The student body at Fresno State is particularly diverse and some students may not have had previous exposure to college-level research tools and sources.
4. All these skills must be refined in college and throughout students' lives. Developing these skills and applying them to new information contexts is particularly important in our rapidly changing information environment, where students will encounter new information sources and tools (e.g., specialized databases, Artificial Intelligence) throughout their lives.
5. There were statistically significant differences in proficiency between demographic groups for nearly every SLO we looked at. These gaps are marked in blue in Tables 1.1-1.3 and 2. Notably:
    a. First Generation students lagged behind their peers for three of six questions related to selecting search tools (SLO 1.1), as well as SLOs 1.2 (vocabulary) and 1.4 (resilience).
    b. Women lagged behind men for four of six questions related to selecting search tools (SLO 1.1).

      c.   Historically Under-represented Minorities (URM) lagged behind their peers for every area of searching (SLOs 1.1-1.4).

6. These data align with the hypothesis that there is unequal access to research experiences and education throughout students' lives. There may also be other factors to explore related to students' confidence as researchers, the assessment approaches used, etc. These gaps will need to be addressed to ensure that all Fresno State graduates have the information literacy skills they need. Information literacy is a skill for lifelong learning leading to equitable opportunities for success.

SLO 1.1:

7. Looking more deeply into the curriculum and assessments (***Appendices A and B***), many popular (e.g., TikTok) and academic (e.g., scholarly articles and databases) sources and tools are addressed. The complexity of the academic research environment (Fresno State has 200 article databases) makes it difficult for a brief tutorial to orient novice researchers sufficiently for them to attain proficiency.

8. The benchmark for proficiency (70%) was <u>not</u> met for Question 2 from ***Credible Sources*** and Questions 1, 2, and 4 from ***Evaluating Sources***. SLO 1.1 may require additional instructional modalities (e.g., learning objects, web pages, research assignments) or assessment approaches (e.g., authentic assessments) for students to attain proficiency. This can only occur through additional attention from departmental faculty, librarians, staff, and students. Students may not have the opportunity to access specialized resources after graduation, so it's important that they become proficient.

SLOs 1.2-1.4:

9. Students were more successful with search skills that they could adapt more easily from other contexts. Any student with access to the web (even on a cellphone) has developed search vocabulary, strategy, and resilience, to some extent. The observational assessment (***Appendix B***) was designed to reflect real-world research questions that relate to students' prior experiences.

10. Anecdotally, some students demonstrated advanced searching expertise (e.g., citation searching) that were essentially "off the charts" for our rubric. Other students could make notes about and describe very sophisticated search strategies, but were unable to translate these to a database search. And some students were only able to propose and enter a one word search into the database, so very much novice searchers. These complexities were beyond the scope of the study, and would be material for an additional, qualitative library science research project.

11. The rubric-based assessment may also provide more flexibility for different approaches to demonstrating proficiency. Students could demonstrate proficiency through multiple modalities: verbal explanations, written notes, and computer searches. There was no single correct answer, so many different search results could be used to demonstrate proficiency when students provided clear explanations of their rationales. Finally, searchers and raters looked primarily at database records to determine relevance, and students were not required to read, cite, or use a full article to demonstrate proficiency.

12. The benchmark for proficiency was <u>not</u> met in one area of the searching study: there was a significant difference in proficiency for search strategy (SLO 1.3) for First Generation students: only 67% of First Generation students were proficient, compared to 79% for non-First

Generation students. Students could demonstrate proficiency by using database features, an area where prior academic research experience was beneficial.

13. We hypothesized that students' proficiency in searching would improve as they had more research opportunities, which vary based on the curriculum in their major. Published studies show that information literacy develops from the curriculum, work experience, maturity and other factors. Published studies demonstrate that library instruction sessions and other library and campus support services may also play a part.

14. Our focus this year was on the proficiency of all students. In 2023/4, we will look at the proficiency of capstone-level students, an interesting complement to this year's data.

4. What changes, if any, do you recommend based on the assessment data?

We have several projects planned by 2026 to help shape these priorities: revising our information literacy PLOs and SLOs, revising our SOAP, and reviewing our badging tutorials program.

As staffing allows, we hope to develop additional, flexible learning objects that can be used by students across learning contexts (e.g., self-guided, introductory course, independent research). For example, librarians have developed a worksheet to scaffold the steps in the search development process. Their pilot worksheet is currently offered as a printable .pdf. We plan to draw on assessment results and other feedback to redevelop the worksheet to function as a scalable learning and assessment tool that informs program-level decision-making.

The Library's Canvas Badging Tutorials program provides an effective method for delivering scalable information literacy instruction to students and assessing student learning, and we will work with library administration to resource this program. The program leverages the campus Canvas instance to meet faculty and students where they are to promote information literacy skills acquisition. We will continue to adjust content and assessments to address the specific needs of our students, and leverage upgrades to Canvas to develop more sophisticated and course-integrated assessment approaches.

We also plan to use the results of these assessments to inform the support library staff provide, both synchronous (Research Help Desk, individual and small-group consultations) and asynchronous (Research Guides, Course Guides, FAQs, real-time searching support.). We will discuss findings with students to provide them with opportunities for self-assessment and reflection as they move through the search process. We also plan to continue our collaborations with campus partners such as academic departments and the Learning Center to collaboratively develop student-centered services.

We are also making changes to our library assessment program for 2023/4. Because of the focus on SLO assessment (at the direction of our Dean, and a necessity due to staffing levels), we changed the membership of our Assessment Working Group to include only faculty librarians for 2023/4. This change was agreed upon by the previous assessment working group, where library staff members also made significant contributions. This year's assessments leveraged significant contributions from library staff outside the working group, and we would like to continue that practice. We plan to also leverage our collaboration with OIE and what we learned about data management and analysis for JEDI - there are many new practices to sustain.

5. If you recommended any changes in your response to Question 4 in your 2021-22 assessment report, what progress have you made in implementing these changes? If you did not recommend making any changes in last year's report please write N/A as your answer to this question.

In our previous assessment report, we discussed plans to redesign the Plagiarism Tutorial. We observed that the assessment items should be revised to align to specific SLOs. We evaluated the tutorial, which is widely used in its current iteration. Any changes will require a significant investment to migrate to a new learning platform (it is currently in Articulate). Those revisions have been postponed to coincide with a larger review of our Canvas tutorials program. When we undertake the revision, we plan to also incorporate new content such as Artificial Intelligence.

We also proposed to begin "segmenting" scores to identify differences in proficiency between students from different demographic groups. Thanks to additional collaboration with OIE, we were able to segment scores by Sex, First Generation and URM status, and Pell Eligibility. We will continue this practice and pilot additional data visualization strategies to help stakeholders act on assessment findings.

6. What assessment activities will you be conducting during AY 2023-24?

Fresno State's Assessment Plan sets out a schedule to assess one Core Competency per year and in 2023/4, an *Information Literacy Core Competency Assessment* is scheduled. This assessment, led by the College Assessment Coordinators for the Library and the Craig School of Business, was not originally included in the Library SOAP. The SOAP will be revised to include the project, and will focus on all dimensions of information literacy. We will work with a stratified sample of 150 capstone-level papers from students' online General Education Portfolios.

We will continue with a previously-planned Canvas-based assessment of PLO 4: "Students will participate actively in the creation of information in a variety of formats." The *Research as Inquiry* Canvas badging tutorial has been fielded in its current form for over a year, so a large sample of student responses is available for analysis. Students who complete the tutorial are asked to complete a four-question assessment to match concepts to a common model for synthesizing information, the BEAM method, as well as to demonstrate understanding through multiple choice questions.

All other previously-planned assessment activities will be rescheduled to 2024/5, a change that has been endorsed by the Dean, Faculty Director of Assessment, and Library Assessment Working Group. We recognize the importance of the Core Competency Assessment to Fresno State and our Accreditors (WASC) and want to ensure that a comprehensive report is completed and posted to the campus assessment website before the WASC Accreditation visit in fall 2025. We will also postpone a previously-planned diversity data audit until a new Dean of Library Services provides guidance and resources to align assessments to library and campus strategic goals. We will extend the current SOAP through 2025/6 to allow time for all rescheduled assessments, and to develop our next SOAP.

7. Explain how your department/program has planned to incorporate Justice, Equity,   Diversity, and Inclusion into your assessment practices. Be sure to include (1)Who will be responsible for implementing the assessment and how will assessment results be shared with faculty and (2)What process your department/program will use the assessment results to make decisions in light of these results?

Beginning this year, the Library restructured our collaboration with OIE to conduct a JEDI analysis of assessment data. To begin, we selected three groups based on the groups and presentation used for General Education Assessment, and this will be our baseline for all assessments going forward. Additionally, OIE is assisting us in developing a stratified sample of student papers for our upcoming Core Competency Assessment. These approaches will assure that we can present statistically valid analyses of the proficiency of key various groups, a first step toward addressing equity gaps. The College Assessment Coordinator will be responsible for coordinating this analysis with OIE each year. These assessments will be shared with all Library Staff at All Staff meetings, and library faculty will use assessment results in program planning.

With a new Dean of Library Services, we will plan development of our next SOAP to incorporate more specific learning outcomes related to JEDI, SLO assessment, and direct and indirect measures of student learning across the library. All our assessments will include focus on actionable results related to JEDI.

Notes: The members of the Library Assessment Working Group 2022-23 included Arantes Armendariz, Ginny Barnes Renaldo Gjoshe, sam hidde tripp, Michelle Pratt, Barbara Windmiller, and Sarah McDaniel (Assessment Coordinator). Matt Doyle, Mercedez Espino, Marianne Foley, Doug Fraleigh, Chris Hernandez and Shuyi Liu also made significant contributions to the assessment program. Many library staff participated in the searching study as facilitators and raters, which made the project better in every way. Thanks also to the Dean and Library Administration team for their support.

Appendix A: Canvas Badging Tutorials Transcripts and Assessment Items

The Library Tutorials Program at the Fresno State Library is a highly effective method for delivering scalable information literacy instruction to students while efficiently assessing their knowledge through the use of open-ended, multiple-choice and matching questions. This program leverages the campus Canvas to meet faculty and students where they are to promote information literacy skills acquisition. We can continue to adjust content and assessments to address the specific needs of our students.

Library Tutorials Program Overview:
- The Library Tutorials course at Fresno State Library is designed to teach students critical information literacy skills necessary for academic success and lifelong learning.
- It offers a structured and engaging curriculum that covers various aspects of information literacy, including effective use of our OneSearch platform, source evaluation, plagiarism and citing, and other critical habits of mind.
- The program is accessible online, allowing students to complete modules at their own pace, making it flexible and accommodating for diverse learning styles and schedules.

Use of Digital Badges:
- Digital badges serve as visual representations of achievement and competency in specific information literacy areas.
- Students earn badges by completing modules, quizzes, and assessments within the program.
- These badges allow students to provide professors with verification of module completion, and also prevent students from having to complete lessons multiple times.

Assessment Strategy:
- To ensure scalability for the large volume of students that participate, the program mostly employs multiple-choice and matching questions as key assessment tools.
- Multiple-choice questions are effective in quickly evaluating students' comprehension of key concepts and their ability to apply information literacy skills.
- Matching questions help assess students' ability to make connections between different aspects of information literacy, such as identifying reliable sources or correctly formatting citations.
- For higher order concepts, open ended questions give us further insight into students' understanding.

Appendix A1: Credible Sources Badging Tutorial

<u>Introduction</u>

When researching a topic for an assignment or in our own personal lives, choosing which information is trustworthy is a difficult task. Deciding which information sources to include in your assignments is something every college student is expected to be able to do. So what makes a source credible, and how can we evaluate our information sources to be sure that we are using the best information possible? In this lesson we will take an in depth look at the sources we use in our coursework and how we can evaluate that information.

At the completion of this lesson you will understand the concepts of credibility and authority, as well as be able to evaluate an information source based on your need. This lesson will provide you with the tools necessary to recognize bias, opinion, and fact. After this lesson students will be assessed for an understanding of these concepts. Successful completion of the assessment will earn students the Credible Sources Badge.

Credible Sources Important Terms

A credible source is a source that is able to be believed, a reputable source of quality information.

An authority is a source of information that is reliable and can be trusted.

Bias is an inclination or prejudice towards one person, group or perspective.

Context is the circumstance that forms the setting for a statement or idea and in terms of which it can be fully understood.

A Trustworthy source is one that is able to be relied on as honest and truthful.

Relevance is the connectedness or appropriateness of a source to the topic.

A journal is a publication distributed periodically (weekly, monthly, quarterly, etc.), devoted to a specific field or subfield of knowledge. Journals usually contain scholarly articles written by professors, researchers, or experts in a subject area.

Peer review is a method used by scholarly journals to assure the quality and relevance of the articles they publish. When an article is submitted, the editor sends copies to several reviewers (or "referees") who are recognized experts in the subject of the article. Each reads the article and offers an opinion on whether it is worthy of publication in the journal, using such criteria as soundness of investigative method, whether the author shows adequate knowledge of research on the subject to date, and whether the article adds to knowledge in the field. Only if the reviewers agree that it meets the relevant criteria will the article be published. Also referred to as scholarly or refereed.

What you need to know about Credible Sources

At some point in college we have all heard a professor say, "Wikipedia is NOT a credible source!" If not that exact statement something along those lines. So why is it that wikipedia is not the best source of information for college students to use? The answer to that question is complex, but it provides a great example for us to use when looking at what makes a source credible.

According to Wikipedia, the tool is defined as:
"Wikipedia is a free encyclopedia, written collaboratively by the people who use it. It is a special type of website designed to make collaboration easy, called a wiki. Many people are constantly improving Wikipedia, making thousands of changes per hour. All of these changes are recorded in article histories and recent changes. For a more detailed account of the project, see About Wikipedia."

Wikipedia is a great way to get quick info and develop some background knowledge, but for college level research it just does not meet the standards required of students. There are a few problems with Wikipedia entries, most importantly they are not reviewed by experts in the field, that the information

can be outdated, and the wiki format could potentially be used to spread misinformation. While the information on Wikipedia may be convenient and relevant, it lacks quality control. To be responsible researchers in college level courses you need to start considering where your information comes from before you include it in papers, presentations or other academic work.

As college students you need to move past focusing on relevance alone and move towards a focus on the quality and credibility of a source of information.

When selecting sources to use for your information needs you need to think about which sources you choose to trust and why you trust them. Take a look at the video below to get thinking about the ways we grant trust to information sources.

How do we grant credibility?

Since we want our audience to trust the information we are presenting to them, we need to be sure we use credible, trustworthy sources in our work. But credibility is more than just trust right? Watch the video below to get a better understanding of credibility and how it fits into our process of evaluating the sources we use.

Context & Credibility

So does this mean that the only source of credible information is peer reviewed journal articles? Absolutely not, as we need to consider the context in which the information was created and the context in which the information will be used. Confused yet? Try watching the video below to gain a better understanding of how credibility is contextual.

Research 101: Credibility is Contextual by UW Libraries is licensed under a CC BY-NC 4.0 license.

Reference sources, like Wikipedia, encyclopedias, etc. have been developed to be useful for developing background knowledge, and gaining an understanding of new and unexplored topics. In this context, they are useful sources. These sources can really help you develop an understanding of the topic.

Still, when it comes time to write your paper, or create a presentation, you want to use sources with more authority on your topic. Academic work, like a research paper or presentation most of the time will require students to use expert evidence. These are just a few examples of how credibility changes based on the context in which you are using the information.

Use the table below to see how credible sources vary by the context of your information need.

If you need	Find
Expert evidence	Scholarly articles, books, and statistical data
Public or individual opinion on an issue	Newspapers, magazines, and websites
Basic facts about an event	Newspapers and books
Eye-witness accounts	Newspapers, primary source books, and web-based collections of primary sources
General overview of a topic	Books or encyclopedias
Information about a current topic	Websites, newspapers, and magazines
Local information	Newspapers, websites, and books
Information from professionals working in the field	Professional, trade journals

Credible Sources Assessment Items

1. Please indicate the course and instructor you are completing this module for (e.g. ENGL 10, Hendrix).
2. In this lesson we asked you to take a look at credibility. What are some questions you should ask when determining an information source's credibility? (select all that apply)
    a. Is this paper longer than 15 pages?
    b. Who is the author of the information and why is this person qualified to write on this topic?
    c. Does the author offer evidence that supports what they are telling you and is there other information out there that helps you confirm?
    d. Is this information peer reviewed?
3. What is a credible source?
    a. A source that contains high quality, trustworthy information
    b. A source that was published in the past week
    c. A source that was written by a college graduate
    d. A source that is longer than 15 pages
4. When is it acceptable to use sources other than peer reviewed journal articles? (select all that apply)
    a. Anytime.
    b. When assignments do not require scholarly articles.
    c. When you are writing about a current event that just took place.

d. Whenever a professor asks for peer reviewed articles, you can actually use any type of article as long as it's more than 5 pages long.

e. When you are trying to gain background knowledge on a topic.

5. When you use credible sources in your papers, it makes your paper:
   a. more trustworthy and effective.
   b. less trustworthy and effective.
   c. seem like it was written by a student.
   d. longer than 5 pages.

6. What contributes to a source's credibility?
   a. Their point of view.
   b. Including pictures.
   c. Their expertise.
   d. Number of pages.
   e. Using big words.
   f. Date of publication.

7. Some ways you can determine an author's expertise on the subject they are writing about include looking at: (select all that apply)
   a. If they have over 10k followers on Instagram.
   b. The authors experience in the field that they are writing about.
   c. If the author has a similar political stance to your own.
   d. The author's credentials
   e. How they look.

8. Bias is:
   a. An old wooden ship.
   b. An inaccurate or unfair presentation of information.
   c. A credible information source.
   d. A peer reviewed journal.
   e. A newspaper article.

9. If an article is peer reviewed, it doesn't matter how old it is - it is always going to be a credible source.
   a. True
   b. False

10. Context matters. Match the following information needs with the most appropriate sources.
    a. Expert evidence: [Choose]   TikTok, Snapchat   Twitter, newspapers, primary source books, and web-based collections of primary sources   Professional, trade journals   Instagram   Newspapers and books   Websites, newspapers, and magazines   Scholarly articles, books, and statistical data   Twitter, newspapers, magazines, and websites   Newspapers, websites, and books   Books or encyclopedias
    b. Public or individual opinion on an issue: [Choose]   TikTok, Snapchat   Twitter, newspapers, primary source books, and web-based collections of primary sources   Professional, trade journals   Instagram   Newspapers and

books Websites, newspapers, and magazines Scholarly articles, books, and statistical data Twitter, newspapers, magazines, and websites Newspapers, websites, and books Books or encyclopedias

c. Basic facts about an event: [choose] TikTok, Snapchat Twitter, newspapers, primary source books, and web-based collections of primary sources Professional, trade journals Instagram Newspapers and books Websites, newspapers, and magazines Scholarly articles, books, and statistical data Twitter, newspapers, magazines, and websites Newspapers, websites, and books Books or encyclopedias

d. Eye-witness accounts: [choose] TikTok, Snapchat Twitter, newspapers, primary source books, and web-based collections of primary sources Professional, trade journals Instagram Newspapers and books Websites, newspapers, and magazines Scholarly articles, books, and statistical data Twitter, newspapers, magazines, and websites Newspapers, websites, and books Books or encyclopedias

e. General overview of a topic: [Choose] TikTok, Snapchat Twitter, newspapers, primary source books, and web-based collections of primary sources Professional, trade journals Instagram Newspapers and books Websites, newspapers, and magazines Scholarly articles, books, and statistical data Twitter, newspapers, magazines, and websites Newspapers, websites, and books Books or encyclopedias

f. Information about a current topic: [Choose] TikTok, Snapchat Twitter, newspapers, primary source books, and web-based collections of primary sources Professional, trade journals Instagram Newspapers and books Websites, newspapers, and magazines Scholarly articles, books, and statistical data Twitter, newspapers, magazines, and websites Newspapers, websites, and books Books or encyclopedias

g. Local information: [Choose] TikTok, Snapchat Twitter, newspapers, primary source books, and web-based collections of primary sources Professional, trade journals Instagram Newspapers and books Websites, newspapers, and magazines Scholarly articles, books, and statistical data Twitter, newspapers, magazines, and websites Newspapers, websites, and books Books or encyclopedias

h. Information from professionals working in the field: [Choose] TikTok, Snapchat Twitter, newspapers, primary source books, and web-based collections of primary sources Professional, trade journals Instagram Newspapers and books Websites, newspapers, and magazines Scholarly articles, books, and statistical data Twitter, newspapers, magazines, and websites Newspapers, websites, and books Books or encyclopedias

_____

Appendix A2: Evaluating Sources Badging Tutorial

Introduction

One of the most frequently asked questions in the library is, "can I use this information in my paper?" Information comes in many different formats and is created in many different contexts. As a result we can sometimes get confused when trying to figure out which information source meets our needs.

At the completion of this lesson you will understand the differences between information created in different contexts and from different sources. Students will also recognize the influence context has on the information. After this lesson students will be assessed for an understanding of these concepts. Successful completion of the assessment will earn students the Evaluating Sources Badge. Context is the circumstance in which a particular source of information is created.

What you need to know about Evaluating Sources

As a student completing research it is important to use the correct types of sources for your assignments needs. Understanding the different types of sources and when to use them is key to your success as a student. Take a look at the different types of sources you may encounter when completing assignments and the contexts in which they are created and used below. Each section will provide insight into each of the types and kinds of sources you will encounter when completing assignments.

If you need	Find
Expert evidence	Scholarly articles, books, and statistical data
Public or individual opinion on an issue	Newspapers, magazines, and websites
Basic facts about an event	Newspapers and books
Eye-witness accounts	Newspapers, primary source books, and web-based collections of primary sources
General overview of a topic	Books or encyclopedias
Information about a current topic	Websites, newspapers, and magazines
Local information	Newspapers, websites, and books
Information from professionals working in the field	Professional, trade journals

As you can see, each source fulfills a specific need. Understanding the differences between each source type allows you to make informed choices when selecting what sources to use in your assignments. Let's take a deeper look at sources below.

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Context matters, as does the format used. For up to date information a newspaper article will be an excellent source. For live feedback at an event, Twitter may be an excellent resource. In academic work though, most often we rely on more credible sources, like books and journal articles. The most important concept to understand from all of this is that different needs require different sources. Peer reviewed journal articles will not always be the answer. There is no one source that will fit the needs of every assignment, instead it is up to you as a researcher to determine the type of sources that will meet your information needs.

Evaluating Sources Assessment

1. Peer reviewed sources are always the best source to use.
    a. True
    b. False
2. **If you needed up to date information on an election as it was happening, what would be the best source(s) (select all that apply):**
    a. **Books**
    b. **Peer reviewed articles**
    c. **Encyclopedia**
    d. **Documentary film**
    e. **Magazine**
    f. **Trade Journal**
    g. **Twitter**
    h. **Newspaper**
    i. **News Website**
3. **If you needed information on the 1964 Philadelphia race riots for a research paper, what would be the best source(s) (Select all that apply):**
    a. **Documentary film**
    b. **Twitter**
    c. **Primary sources**
    d. **Magazines**
    e. **Books**
    f. **Peer reviewed articles**
    g. **Websites**
    h. **Trade Journals**
4. **If you need information on the changes in population in Fresno, what would be the best source(s) (select all that apply):**
    a. **Books**
    b. **Trade Journals**
    c. **Twitter**
    d. **Peer reviewed articles**
    e. **Newspapers**
    f. **Websites**
5. If you need information on a specific profession, what would be the best source(s) (select all that apply):

a. Trade Journal
b. Books
c. Magazines
d. Newspapers
e. Peer reviewed Journals
f. Websites
g. Twitter

6. **If you need background information on a topic you do not know much about and are looking for general overview, what would be the best source(s) (select all that apply):**
   a. **Encyclopedia**
   b. **Books**
   c. **Scholarly articles**
   d. **Newspapers**
   e. **Websites**
   f. **Wikipedia**

7. When evaluating sources, one of the most important aspects to consider is:
   a. The process that led to the source being published
   b. How much you agree with the information source
   c. The number of followers the author has

Appendix B1: Searching Assessment Student Worksheet

In Search of Student Input! Student Information Sheet

This information will be used to conduct some demographic analysis of our findings. Students' anonymity will be protected and this information will be maintained securely and separately.

Name: _____

Student ID Number: _____

College (check one)

☐ CAH (Arts & Humanities)   ☐ Unsure: Major _____
☐ CHHS (Health & Human Services)   ☐ Undeclared Major
☐ CSB (Business)
☐ COE (Engineering)
☐ COSS (Social Sciences)
☐ CSM (Science and Math))
☐ JCAST (Agriculture Sciences and Technology)

Year (circle one):   1st Year   2nd Year   3rd Year   4th Year   5+ Year

Are you a first-generation student?   *Yes   No*
Have you visited the Research Help Desk?   *Yes   No*
Have you used the "Ask a Librarian" Chat   *Yes   No*
Have you used email reference   *Yes   No*
Has your class had a Library instruction session? *Yes   No*

How confident are you in your search skills? (please circle one)

Confident   *Somewhat Confident*   *Somewhat Unconfident*   *Unconfident*

I understand that my responses will be used to understand students' search skills in order to improve the library's programs and services.

I agree to having my responses captured (audio and screen capture) for fifteen minutes in order to receive a gift card.

Signature _____

Research Scenario

Your instructor has asked you to pick one of the following research questions and find 2-4 relevant sources in OneSearch. We are most interested in your search process - how you begin and how you adjust your search.

Choose <u>one</u> topic to work with (circle one):

1. What is the relationship between education and incarceration, and what can we do to reduce any inequities?

2. What are the health effects of growing up in the Central Valley, and what can we do to improve the health of future generations?

Spend 2-3 minutes making some planning notes about how you would start your search. What keyword terms would you use to find sources

Appendix B2: Searching Assessment Facilitator Guide

Overview

- In this observational study, we will be assessing student learning outcomes (SLOs) in information literacy, specifically related to search strategy.
- Students will be asked to complete an intake sheet, <u>develop and revise</u> a search strategy, and respond to two reflection questions.
- Responses will be recorded in writing and via screen and audio recording. (students may opt out of audio - if so, please take notes).
- Students will be asked for a maximum of 15 minutes of their time. Upon completion of the assessment, they will receive a Starbucks gift card.

Assessment Learning Outcomes

1.2 Students will use vocabulary appropriate to the search tool for effective initial and advanced searches
1.3 Students will use a research question to plan a search, including selecting information sources, determining keywords and retrieval techniques, and establishing an appropriate research scope.
1.4 Students will demonstrate critical thinking performing searches in order to alter search strategies based on results

Description

This observational study will be conducted on the 2nd floor of the Fresno State Library by Library Staff and Student Assistants. The assessment will analyze how students form a progressive list of search terms and approach research (through writing, talking, etc.). Students will participate in this activity by searching with a facilitator to keep focus on the learning outcomes and respond to reflection questions at the end. A Library Staff member will facilitate and a Student Assistant will take care of administrative tasks such as forms and time keeping.

Materials

- Four Mac and PC laptops with web browsers and Zoom
- Student Handouts on colored paper
- Gift card log and gift cards
- Clipboards / Pens / paper for student paperwork and staff note-taking
- Extra name tags and badges

Facilitator Script

<u>Introduction 5 minutes</u>

- Greetings
    - My name is…. Can I call you [firstname]?
    - Setting a timer for 15 minutes just so we don't take too much of your time.
- The purpose of the study is to understand how you search
    - You will be asked to:
        i. Complete a short questionnaire
        ii. Respond to a search scenario
        iii. Search in a database and revise the search
        iv. Answer a reflection question
    - We will observe how you approach the task:
        i. I will walk you through the steps
        ii. Responses will be recorded with screen and audio capture
        iii. There are no wrong answers!
- Consent
    - Participation is voluntary and incentivized
    - Results will remain anonymous
    - Gathering your information for administrative purposes only
    - Do you have any questions?
- Let's begin!
    - Please complete the questionnaire (side 1)
    - Choose one of the following research scenarios and take 2-3 minutes to write down some possible search terms (side 2 - I'll set up the computer)
    - Ready?
- Launch the Zoom recording

<u>Searching Task</u>

- Ready? [begin recording] - I'm here with [firstname]
- Next, we're going to search in the OneSearch library database
- I'm going to ask some questions as you walk me through your process!
- *Note: organic <u>as long as there an initial search and at least one revision.</u>*

<u>Verbal Cues</u>

(<u>not required</u> to use all of them)

Initial search:
- Please tell me a little bit about the search terms you wrote down
- Imagine a professor's given you this assignment for a paper…
- Please talk me through how you would get started with your search
- Talk me through how you're entering your search into the database

Refining search:
- ○ What adjustments would you make to your search at this point?
- ○ Let me know when you have a few good sources OR please choose one of the results
- ○ What are the reasons you chose this source? How do you decide which sources are useful or not useful?
- ○ How would you search next to find better sources?
- ○ How would you update your search to find more useful items?
- ○ Please explain at least one revision to your search strategy.

Affirmation, encouragement:
- ○ Can you say more about….?
- ○ What's your strategy? Why?
- ○ What would you do next?
- ○ Affirmation: that's very interesting, that's a great idea, that does look promising, love that, how did you learn that strategy, etc.

Wrap-up

- ● What is the most challenging part of the search process?
- ● Is there anything else you'd like to share with us?
- ● Thank you so much for your time!*
- ● End recording
- ● Hand off to student assistant to collect paper, sign gift card log, and receive Starbucks card.

End.

Appendix B3: Searching Rubric

Please use this rubric for reference and complete a Google Form for each assessment you rate.
- We removed identifying information like student names. These materials are confidential, please do not discuss them!
- We are looking for evidence of the following student learning outcomes (SLOs): vocabulary appropriate to the search tool (SLO 1.2); search strategy (SLO 1.3); and resilience to alter search strategies based on results (SLO 1.4)

	Advanced	Proficient	Developing
Vocabulary (1.2)	Achieves proficiency *AND* one or more of the following: ● Uses multiple keywords for each concept; *or* ● Explores search results to find new keywords and sub-questions; *or* ● Uses "Subjects" (controlled vocabulary) effectively	● Divides the research question into two or more concepts using keywords *OR* ● Divides the research question into two or more sub-questions	Does not achieve proficiency, even when prompted.
Strategy (1.3)	Achieves proficiency *AND* one or more of the following: ● Draws on prior knowledge (life experience or course work) to plan the search strategy; *or* ● Navigates to full-text resources and expands the search using content and database features	Uses one or more techniques appropriate to the search tool, for example: ● Uses AND, OR, and "" effectively in the search; *or* ● Uses limits (e.g. date, scholarly articles); *or* ● Navigates to detailed records to gather more information; *or* ● Uses the Advanced Search screen	Does not achieve proficiency, even when prompted.
Resilience (1.4)	Achieves proficiency *AND*: ● Revises the search multiple times based on search results and new ideas	Revises the search strategy at least once: ● Regroups with new search vocabulary or strategy when not satisfied with the results; *or* ● Revises the search vocabulary or strategy to improve results	Does not achieve proficiency, even when prompted.

What do you find most challenging about the search process? (enter notes in Google Form)

Important Terms:

Term	Short Definition	Example: What negative health effects do people in the valley experience?
Keyword	Search term(s) for a concept; includes synonyms, broader terms, and narrower terms	Health effects, health, disease, asthma, heart disease, cancer
Sub-question	Divides a big research question into a few different the question into	What health effects are caused by air pollution?
Subject Heading	Official vocabulary used to "tag" items as related to the concept. Include Library of Congress, Medical Subject Headings, and other controlled (specialized) vocabulary shown in the Subjects part of a Detailed Record. Students can click on the link, select the subject from the list of topics on the menu bar, or type the exact subject heading into their search.	Environmental Health – United States
AND	Use between search terms to narrow the search to things that include both Can also be used in the Advanced Search.	pollution AND Fresno
OR	Use between search terms to expand the search to things that include any Can also be used in the Advanced Search.	Fresno OR Clovis
"" (quotation marks)	Used in OneSearch to search for a phrase instead of the two words separately	"Central Valley"

Searching Rubric Version 5. SLO subgroup of the Assessment Working Group: SMc, AA, GB, SHT, with M. Espino. 6/2/2023.