# Teaching SIFT for Source Evaluation in Asynchronous One-Credit Information Literacy Courses

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**abstract:** With an awareness of growing issues in teaching source evaluation, the authors explored new methods to incorporate this skill into one-credit asynchronous information literacy courses. The authors discovered improvements in student performance when using SIFT and identified key strategies for its implementation to achieve best results.

## Introduction and Literature Review

Strategies for teaching college students to evaluate online sources are currently undergoing a dramatic reassessment and revision. Traditional methods of source evaluation such as the CRAAP (currency, relevance, authority, accuracy, and purpose) test and other checklist-style evaluation methods have received criticism for various reasons: [1] for not doing enough to address the ways the Internet has changed and evolved,[2] for not emphasizing expert evaluation strategies and behaviors,[3] for not asking students to consider the context of sources sufficiently,[4] and for not doing enough to help students "develop the skills to assess what they read" by "engaging with the nuances of social topics."[5] CRAAP does "little to confront the complicated au-

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thority markers on the web"[6] and "does not help students understand the differentiation of sources in an online environment . . . a student might not be aware of the differences

among scholarly journals, online archives, or news sites."[7] Additionally, CRAAP can reinforce characteristics of majority culture, such as either/or thinking, in ways that can be harmful to all students.[8]

Studies have shown that students frequently struggle to accurately identify and evaluate online sources[9] and that college students often incorrectly assess their own abilities to recognize fake news or misinformation.[10] It has also been observed that students employing traditional source evaluation methods like the CRAAP test learn to rely more heavily on superficial evaluation criteria, even if other, more nuanced criteria are discussed in their classes.[11]

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A growing awareness of these issues inspired the authors to search for ways to update their teaching of source evaluation in the credit-bearing information literacy classes they taught. They hoped that finding and applying updated methods of source evaluation in credit courses would also help them find ways of adapting new methods of teaching source evaluation to the one-shot library instruction sessions they taught as well. If such methods worked in an asynchronous environment, they may prove even more effective in live sessions.

One new approach to online source evaluation that librarians have begun to adopt is the SIFT method of source evaluation developed by educational technologist Michael Caulfield.[12] This method focuses on the evaluation of online sources and includes strategies that encourage informed skepticism. SIFT stands for stop, investigate, find, and trace. It asks students to stop and consider what they already know about their source; to investigate the source to find out more information; to find better sources if they need to; and to trace any claims, citations, or media used in the source to the original context.[13] SIFT uses lateral reading, a proven strategy for identifying misinformation online[14] that is also used by professional fact-checkers; it involves verifying information as you read. Lateral reading examines trusted sources outside the website in question to better determine the site's reputation and credibility.[15]

SIFT "offers major improvements over CRAAP in speed, simplicity, and applicability to a wider scope of print and online publications, platforms, and purposes."[16] However, due to its more nuanced approach, incorporating SIFT into library instruction requires a good deal of reconsideration. SIFT is not a one-for-one substitution for the CRAAP test, nor is it as simple to implement as passing out a checklist for students. The SIFT process is not linear, so students will need to figure out which step makes the most sense to start with. Students also may not need to use all the components of SIFT for every source they encounter. Teaching SIFT will be messier than using a checklist and will require teachers to reconsider their own approaches to teaching source evaluation.

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This article looks at how two librarians teaching two different one-credit information literacy classes reconsidered their approaches to teaching source evaluation, deciding

to no longer use the CRAAP test and to incorporate the SIFT method instead, to update and improve this aspect of the class. It highlights activities employed to revise these classes to include SIFT and considers how these changes impacted students' learning.

## One-Credit Courses on Information Literacy

At Coastal Carolina University in Conway, South Carolina, librarians in the Research and Scholarship Department of Kimbel Library teach one-credit asynchronous online information literacy classes. Currently, three courses are available to students: LIBR 103 (a general academic research class), LIBR 123 (a business research class), and LIBR 133 (a science research class). Each class is taught in the second half of the spring and fall semesters for eight weeks. Although electives, these courses are among a limited number available halfway through the semester; as such, they can be a popular choice for students who find they need to maintain their financial aid status or graduation projections. Because they are taught online asynchronously, these classes can be easier to fit into student schedules than other available eight-week course options. All these courses incorporate source evaluation components as part of their overall learning outcomes.

### LIBR 103: Strategies for Academic Research

LIBR 103, Strategies for Academic Research, is designed to give students from any major an introduction to the knowledge, skills, and resources that will help them be successful researchers at the college level. The content of the course might vary slightly by instructor, but the learning outcomes are always the same: Students will be able to select appropriate library and online resources for research; use online services to request, retrieve, and organize information; apply evaluative criteria to information to assess value and credibility; and identify ethical and legal issues relating to information use. LIBR 103 is different from Kimbel Library's other LIBR credit courses in that it focuses on teaching students to use general interest academic databases and resources, which any student can find beneficial.

### LIBR 123: Strategies for Business Research

With LIBR 123, students focus on strategies and resources for business research. While some strategies are more universal, business strategies also focus on the types of sources most relevant to business studies and where they are found: 10-K reports from SC ED-GAR, financial statements from Mergent Online, stock standings from Yahoo! Finance, official websites from Google, analyst reports from Business Source Complete, and more. Activities include quizzes, discussion posts, and research reports to develop student skill and assess student application of the pertinent strategies and resources. After the course, students should be more capable with business resources.

### Classic Source Evaluation

To meet the goals of the one-credit courses, both LIBR 103 and LIBR 123 addressed source evaluation strategies, adopting CRAAP as the primary framework. CRAAP was at least somewhat familiar to students and was easily applied across subjects. Initially, it seemed a reasonable choice.

### LIBR 103: Classic Source Evaluation for Academic Research

LIBR 103 included a single week focused on evaluating sources, which used the CRAAP test.[17] The CRAAP test asks students to consider their sources' currency, relevance, authority, accuracy, and purpose. While CRAAP can be taught in different ways and has different variations among teachers, it is most often used as a checklist where students answer a list of questions about their source. Students in LIBR 103 were asked to complete a CRAAP worksheet for sources they included in their final project. Students also watched a video that showed CRAAP applied to a website.

Student evaluations of their chosen sources were often superficial, and since the bulk of their evaluations were part of the final project, no time remained to help students improve their skills. Students based their evaluations on their experiences finding the source (where they found it) or information they found in the source itself (what the source told them about itself) only, which is what CRAAP asks. Students stated sources were credible "because I found it in the library database" or "because it is a .org website." Deeper evaluation requires outside knowledge, like understanding that anyone can buy a .org domain or realizing that library sources do not all have the same credibility, to give their analysis more depth and nuance. CRAAP was not preparing students in LIBR 103 to give more than superficial evaluations.

### LIBR 123: Classic Source Evaluation for Business Research

In the lesson for week 2, students considered why anyone provides sources, starting with personal familiarity and resource credibility. Students were provided an everyday scenario where an unfamiliar classmate claimed to know all the best party spots and said that the party hosted by a popular student organization would be lame. The students then explained why they would trust or distrust this classmate. The provided rationale aligned closely with CRAAP's "authority," which was the goal of "credibility." This lesson then finished with brief descriptions of popular sources and scholarly sources and a single quiz assessment.

In week 3, students considered what qualities of a source make it credible, focusing on the experience, education, reputation, and accountability of the source's author. Given a scenario where they needed to repair a car, students recommended one of three mechanics, each with different education and experience and different reputations and history within the community. This scenario then connected the process of evaluating a mechanic on education, experience, reputation, and accountability to the process of evaluating an author as well as publishers and platforms. The lesson then finished with brief descriptions of business databases and related strategies and a quiz.

That concluded all discussion of source evaluation until the final exam: one-part business report, one-part self-reflection essay. In the essay, students discussed how they found and evaluated the sources they included in their reports. Although all but one student referenced high-quality sources, more dubious sources were also referenced in nearly equal measure; anonymous blog posts from

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aggregate outlets were especially prevalent. Moreover, students equated quality with relevance, suggesting sources were high-quality due to their topics and presentations despite suspect authors and platforms. These results clearly indicated a need for a different approach to source evaluation.

### Updated Source Evaluation

The need to update source evaluation coincided nicely with the implementation of a new discovery platform, necessitating an update to most materials related to the course. Discussions on these updates included discussions about more modern approaches to source evaluations. General impressions within the department aligned with SIFT. As such, LIBR 103 and LIBR 123, both taught the semester after the system change, were chosen to be redesigned to address source evaluation through SIFT.

### LIBR 103: Updated Source Evaluation for Academic Research

In LIBR 103, source evaluation was covered in the final course module. To incorporate SIFT, materials related to using the CRAAP test for source evaluation were removed and replaced with new materials about the SIFT process, some created by the instructor and some from other sources. The materials in the module that were not specifically about SIFT were updated as needed, but not changed in significant ways from the previous version of the class.

The revised source evaluation module in LIBR 103 began with a video that talked about the different types of sources students would encounter when doing research. This video was a short segment from the video *Effective Internet Search: Basic Tools and Advanced Strategies*.[19] The video segment covers the differences between types of sources, such as books, journal articles, magazine articles, newspaper articles, and websites. The rationale behind starting with types of sources is that students often struggle to differentiate between types of

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sources, especially when the sources are online.[20] If students first learn to identify the type of source they have located, it should help them better understand the source itself and better determine the next step in their evaluation process.

The second video in the source evaluation module is North Carolina State University's "Peer Review in 3 Minutes" video (https://www.youtube.com/watch?v=rOCQZ7QnoN0). This video was chosen to help students understand more about what makes a source peer reviewed and how that process is meant to ensure that the information is high quality and less likely to contain errors. Because freshmen often enroll in the class, it is also meant to help students who may have done little, if any, work with scholarly, peer-reviewed sources begin to identify the characteristics of those types of sources.

After covering the different types of sources and the differences between scholarly peer-reviewed sources and non-peer-reviewed sources, students were introduced to the concept of SIFT by watching a short video created by Wayne State University library (https://www.youtube.com/watch?v=-NAkkcxbM5k). This video was chosen because

it is concise and shows examples that students may encounter that SIFT can help them navigate. This video is followed by the Stanford History Education project's short video that introduces lateral reading (https://www.youtube.com/watch?v=SHNprb2hgzU), an important part of the SIFT process, to emphasize the skills involved in doing this type of evaluation.

After reviewing the week's videos and related readings, students take a short quiz and then participate in an online discussion board where they answer a prompt related to source evaluation and discuss this topic with classmates. In the evaluation module, there are also two optional games students can play to practice their evaluation skills. One was a link to the online game Factitious (http://factitious-pandemic.augamestudio.com/#/), where students can practice evaluating if news stories are fake or real, and the other is a game created by the instructor with H5P, where students can practice evaluating source types. In the final project for LIBR 103, students complete a "research log" where they choose a topic and find five different resources about it, using skills learned in the class.

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As part of this assignment, students describe their search process, explain why they chose sources, and identify two strategies they used to evaluate their sources. Strategies used should come from SIFT or lateral reading. To make evaluation easier, students were provided with a list of strategy ideas for each type of source to use if they were not sure how to approach the evaluation. (See the Appendix.) For example, to evaluate a website, the strategy ideas list would suggest researching the author or organization behind the website on Wikipedia or Google to learn more about their reputation, or using the ICANN (Internet Corporation for Assigned Names and Numbers) Whois lookup (http://lookup.icann.org/) to discover the registered owner of the website. Students were encouraged to pick strategies that made the most sense for the sources they were evaluating.

Because the research log asks students to report five different types of sources (two books, a video, and two articles) and to provide two different evaluations for each source, they need to practice applying evaluation techniques from SIFT multiple times to complete the final project. Because they were using different types of sources, their evaluations should require a variety of different strategies from SIFT.

Overall, students recognized and appreciated the different approach to source evaluation in LIBR 103. Several students commented that it was different from what they had been taught before but that it made sense, and they were glad to learn it. Students enjoyed discussing topics related to source evaluation and misinformation. They saw these issues as things that affected their lives inside and outside of the classroom, and

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they wanted to talk about them. Students' application of SIFT in the final project was generally good, but some students ignored that section of the project. It was unclear if students skipped it because they did not understand it or for some other

reason. In retrospect, more practice applying SIFT ahead of the final project would have been better for students. This could be accomplished by moving the SIFT module to an earlier spot in the class, and then incorporating practice into the modules that follow.

### LIBR 123: Updated Source Evaluation for Business Research

To address the problems with source evaluation seen in LIBR 123, two changes were made. First, source evaluation was included each week to provide students with more practice. Second, SIFT was presented early in the class, using examples of popular sources and business-specific sources to better illustrate its application.

In week 2, source evaluation was addressed in one lesson and one activity. The lesson focused on lateral reading via a 15-minute video from Crash Course (https://youtu.be/GoQG6Tin-1E) and an overview of SIFT. The video highlighted the flaws of traditional methods and the value of lateral reading, a key component of SIFT. The overview of SIFT then put a "brand" to lateral reading for easier recall and application than the more academic and abstract "lateral reading." Week 2 also included a discussion in which students evaluated one of three questionable sources with both vertical and lateral reading, noting the differences. Because of the asynchronous schedule, the discussion was kept open throughout the course for easier reference.

For weeks 3, 4, 5, and 6, source evaluation was incorporated into activities. Students first generated citations for and evaluations of sources provided to them, an exercise with controlled examples. Next, students evaluated sources used by their peers in a previous exercise, a less-controlled exercise with sources better fitting student search patterns. Then, students created a company overview with original sources, each with an accompanying evaluation, pushing them to consider their own process. Students then revised their overviews by adding more sources to better support analysis of the company's standing, again pushing students to consider their individual processes. Each week, instructor feedback affirmed ef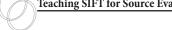fective evaluation strategies and questioned less-effective efforts. The scaffolded nature of activities supported the cyclical nature of research and fit within the asynchronous design of the course. Ultimately, these efforts culminated in the four-part exam that required students to develop a comprehensive company report, complete

> **. . . instructor feedback affirmed effective evaluation strategies and questioned less-effective efforts.**

with original sources and evaluations for each. Students provided a draft of the report in week 7, a final report during Exam Week that was revised based on instructor feedback, a reflection on the research process, and a reflection on the sources cited.

Although the smaller class size made for a poor comparison to previous semesters—4 enrolled in the course and 2 completed it, compared to 18 enrolled and 14 completed—two improvements were apparent. First, students in this iteration more often sought guidance on the business concepts than on the research concepts, indicating an increased comfort with research and evaluation. Second, students showed a gradual improvement in the selection and evaluation of sources, discarding dubious sources earlier in the semester for better ones. Collectively, such improvement indicates a case for incorporating SIFT early and throughout the course.

## Teaching Strategies Moving Forward

Overall, students in both one-credit courses showed improvement in choosing and evaluating sources with the change from CRAAP to SIFT. However, simply referencing SIFT proved insufficient. In LIBR 103, students practiced source evaluation only once before the final project, leading to some similar issues in applying SIFT as earlier students had shown in applying CRAAP. In LIBR 123, however, students encountered source evaluation

> **Overall, students in both one-credit courses showed improvement in choosing and evaluating sources**

early and often and showed a better application of SIFT. The results of LIBR 123, even with its smaller sample size, combined with those of LIBR 103 suggest that students should encounter source evaluation early in the course and practice it multiple times before the final project.

Source evaluation does not need to become the focus of the course, however. Source evaluation can be incorporated organically into most topics. For example, a module on keywords could also ask students to consider why similar keywords yield different results and how related sources utilize keywords differently. Additionally, the same module could address "click restraint," looking at the results before deciding which link to click. These strategies, although not specific to SIFT, empower students to consider how

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their search process can influence source quality. Even information topics seemingly unrelated to source evaluation can still incorporate evaluation activities. This additional practice could lead to a final project where students demonstrate an improved application of source evaluation—all in an asynchronous environment.

## Conclusion

Teaching students to evaluate sources is not only an essential academic skill but also an essential life skill. Librarians should empower students to practice "informed skepticism" as recommended in the Association of College and Research Libraries (ACRL) Framework for Information Literacy for Higher Education, both in their academic and everyday lives. Although few librarians have the luxury of teaching a credit-bearing course on information literacy, we have seen that such opportunities help students develop these skills over time.

While preliminary research justifies SIFT's popularity as an effective method, librarians and teachers must continue observing the ever-changing landscape of information to ensure SIFT remains effective. It has already been noted that "SIFT, like CRAAP, is based on a reactive approach: the individual is an *agent*, acting upon information objects they find. In today's information landscape . . . consider the information object *as the agent that is acting on the individual it finds*."[21] Alaina Bull, Margy MacMillan, and Alison Head describe this as a proactive approach where students could consider, in addition to SIFT,

how information is pushed to them.[22] Evaluating sources is essential, but understanding the influence of external, otherwise invisible, forces is also important. Librarians must assess the information evaluation methods we teach to make sure that we—and our students—keep up with the ever-changing landscape of information.

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# Appendix

## SIFT/Lateral Reading Strategy Ideas

Different methods of investigation will make more sense for different types of sources. Here are some examples of ways you might want to use lateral reading to further investigate a source.

| Websites | Books |
|---|---|
| • Look up the author (or organization) behind the website on Wikipedia and Google to find out more about them from other credible sources. What is their reputation? | • Look up the author to verify their credentials in another source. Does the author have verifiable expertise in the subject they are writing about? |
| • Does the information the website gives in its "about us" page match with what other credible sources are saying about it? | • Look up the publisher and find out more about their reputation. Do they generally publish scholarly or popular books? Is there any information about how easy or difficult it is to get published? |
| • Can you verify the credentials of the author (if one is listed) in another source? Does the author have verifiable expertise in the subject they are writing about? | • If the book is self-published, is there evidence of it having been professionally edited? |
| • Use the ICANN Whois lookup to see if you can find out who owns the website (https://lookup.icann.org/). Is there an owner listed that you can find information about? Could the ownership indicate a potential bias? | • Find published (not customer written) book reviews if possible. What do critics say about the book? Do they point out any potential problems with it? Do they recommend it? |

| Magazine / Newspaper articles | Academic journal articles |
|---|---|
| • Look for information about the magazine or newspaper on Wikipedia and Google. What is the history of the publication, and what is its reputation?<br>• Can you find out about the editorial process of the publication? Does it have editors, fact-checkers, other review processes in place?<br>• Can you verify the credentials of the author(s) of the article? What are their areas of expertise? | • Look for information about the journal on Wikipedia and Google. What can you find out about its reputation?<br>• Can you verify the credentials of the authors of the article in another source?<br>• How easy or difficult is it to get published in this journal? Can you find the acceptance rate?<br>• What is the journal's peer review process? If there isn't a peer review process in place, how are articles chosen for publication?<br>• Who is the journal's editor and who is on the editorial board? Can you verify their expertise in other sources? |

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