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# SINK OR SWIM? A CASE-STUDY APPROACH TO TEACHING INFORMATION EVALUATION

## KATIE STRAND AND RACHEL WISHKOSKI

### INTRODUCTION: SHARK-INFESTED WATERS?

"Is this a reliable source?!" The post-2016 U.S. presidential election environment has drawn renewed attention to the need for robust and critical evaluation skills in navigating a complex information landscape. Cries of "fake news!" in everyday life resonate in our library and classroom spaces, prompting interest in source evaluation among faculty and amplifying students' general skepticism of news and other information (Madden, Lenhard, & Fontaine, 2017; Rose-Wiles, 2018). Although source evaluation is a nuanced skill that requires practice, academic librarians are often asked to help students master evaluation in a one-shot session.

While "fake news" is hardly a new phenomenon (Watson, 2018), the ACRL Research Planning and Review Committee highlighted "fake news and information literacy" as one of their 2018 top trends (p. 287). Recent scholarship in librarianship has responded with pedagogical literature as well as theoretical pieces challenging us to unpack our competing understandings of "authority" (Angell & Tewell, 2017; Bluemle, 2018). Research in psychology and education has also highlighted how "information is personal," acknowledging the major roles of identity, emotion, personal experience, and core beliefs in how we assess materials we come across (Sweet, Swanson, & Shermak, 2019, echoed in the findings of Silva, Green, & Walker, 2018).

How can librarians help students take the plunge into the wide-open sea of information, teaching them to swim through shark-infested waters? How can we encourage deeper exploration, rather than surface-level assessments of information (Silva, Green, & Walker, 2018)? One popular approach is the checklist-with-guiding-questions model, exemplified by the CRAAP (Meriam Library of CSU Chico, 2010) and RADAR tests (Mandalios, 2013). Critical of checklists as overly reductive, others have advocated moving away from this mentality (Angell & Tewell, 2017; Diekema, Holliday, & Leary, 2011; Meola, 2004; Ostenson, 2014). Alternatives include decision-based or filtering models, assessments of cognitive authority, and iterative approaches, as summarized in Silva, Green, and Walker (2018).

As Leeder and Shah (2016) have shown, source evaluation practice results in measurable improvement in search behavior, highlighting the impact of library instruction in this area. Teaching evaluation in a one-shot with students of varying skill levels and experiences, however, is challenging. This paper will discuss our attempt to develop a solution that would work in our institutional context, sharing a new lesson designed to teach source evaluation through case-based problem-based learning, or CBPBL (Carder, Willingham, & Bibb, 2001).

### BACKGROUND: LIBRARY INTEGRATION WITH ENGLISH COMPOSITION AT UTAH STATE UNIVERSITY (USU)

The Learning & Engagement Services (LES) department works collaboratively with USU's Writing Program to integrate library instruction into the first- and second-year English Composition courses, ENGL 1010 and ENGL 2010 (Hyde, Rosenberg, & Strand, 2019). Our approach to integrated instruction is grounded in best practices in the profession and is responsive to the findings of our own research. As a result, our information literacy instruction is always evolving. One major shift followed an authentic assessment of 900 USU student papers from four different stages of the undergraduate curriculum in 2015 (Holliday et al., 2015; Lundstrom, Diekema, Leary, Haderlie, & Holliday, 2015). LES librarians created two new lessons to develop topic

refinement and synthesis skills in ENGL 2010 students. The majority of all face-to-face ENGL 2010 instructors brought their classes to the library for three sessions, including the two new lessons and a research day.

Two years after the creation of the Narrowing a Topic and Synthesis lessons, new assessment findings and changes in the 2010 curriculum prompted LES to once again revise instruction to better meet student needs. An assessment of ENGL 2010 students' final papers showed that while students selected a good variety of sources in their research, they struggled to evaluate the credibility and relevancy of the information they found (Eastman et al., 2018). Focus groups with ENGL 2010 faculty and graduate instructors were conducted around the same time to better understand instructor perspectives of student needs and their experiences with the current library lessons. Aligning with the authentic assessment findings, instructors consistently mentioned that their students struggled to evaluate information. In fact, the research learning outcomes for ENGL 2010 had recently been revised to draw explicit attention to this skill, incorporating the objective of being able to "evaluate different types of sources in relation to the researcher's information need."

The opportunity to respond to this gap indicated by our assessment data and stakeholder feedback came during the summer of 2018. LES divided into teams to update the existing lessons and create a new lesson focused on source evaluation.

## OUR NEW SOURCE EVALUATION LESSON

### Design

We employed a backwards design approach (McTighe & Wiggins, 2012) to create our lesson, which would come first in the ENGL 2010 three session sequence. In addition to discussing evaluative criteria, we wanted to give students the opportunity to apply their knowledge and the space to reflect on the complexity of evaluation. We then focused on learning activities that would support these outcomes (fully articulated in the lesson plan in Appendix A). Active learning is not only a pillar of our instruction program, but a pedagogical focus across our university. We also hoped that interactive and dynamic instruction would achieve student buy-in early in the ENGL 2010 library sequence. To structure the activities, we turned to Kolb's (1984) learning cycle, ensuring students had opportunities for concrete experience, reflective observation, abstract conceptualization, and active experimentation.

The bulk of the lesson was designed to utilize case studies, a type of active learning that closely resembles case-based problem-based learning (CBPBL), a specific type of problem-based learning (PBL) in which students work together to solve real life scenarios and immediately apply their skills to a relevant and complex problem. Initially developed in the context of medical education, PBL has been adapted for information literacy instruction (Macklin, 2001; Wenger, 2014). This approach has been successful in general, one-shot, 50-minute sessions (Carbery, 2011; Enger et al., 2002; Kenney, 2008) and in specific disciplinary courses (Cook & Walsh, 2012; D'Angelo, 2001; Diekema, Holliday, & Leary, 2011; Milczarski & Maynard, 2015). CBPBL involves "tightly focused mini-cases" that allow students to connect to "the problems or dilemmas faced by the character(s) in the narrative, calling upon the students' use of information gathering and decision-making skills in identifying key issues and postulating possible solutions" (Carder, Willingham, & Bibb, 2001, p. 181). Librarians have reported significant benefits to PBL and CBPBL including increased student engagement, the development of critical thinking skills through hands-on practice, peer-directed learning, and an increased sense of relevance (Glusker, 2017; Roberts, 2017; Spackman & Camacho, 2009).

We saw the power of CBPBL to provide students with critical distance to practice a nuanced skill before they embark on the higher-stakes project of their own research. The careful selection of examples for our case studies allowed us to represent common essay topics, source types, and challenges faced by ENGL 2010 students in their professional and personal lives. Due to the time constraints of a single session, our lesson takes ideas from CBPBL but provides more structure and guidance to focus specifically on evaluating information. Our adapted approach makes our lesson scalable to many classes, students, and librarians.

### Content

In the interest of space, we will highlight a few key elements of the lesson here and encourage readers to explore the lesson plan available in Appendix A. Additional teaching materials for the lesson are available at https://libguides.usu.edu/2010lessons/f2f.

The lesson opens by recognizing and validating what students already know, inviting them to share their existing experience evaluating information through a think-pair-share exercise. We find that the complex task of evaluation feels less daunting when we are able to show students that they already employ some evaluation strategies on their own. The librarian then leads a discussion, amplifying, connecting, and extending the knowledge students already have about these strategies.

The lesson then transitions into lecture, though this content is deliberately short and we encourage the librarian to make connections back to the preceding discussion. The lecture is organized around an "Evaluation Wheel" infographic (updated from

an earlier version created by our Online Learning Librarian), which consists of investigative strategies to uncover the "who, what, when, where, and why" of a source (Figure 1). These strategies are designed to be adaptable depending on the type of source and how it will be used, and are presented in a wheel to suggest that evaluation is an iterative process.

**Figure 1: Source Evaluation Wheel Infographic**
**\<Placeholder; Editors will place Figure here in final doc\>**

Our approach is intended to encourage students to think critically about information rather than follow a structured checklist, while still offering a guiding framework appropriate for the ENGL 2010 audience. While the questions on the wheel are often on evaluation checklists, we try to emphasize that sources are not inherently "good" or "bad" because so much depends on context. The structure of the evaluation wheel paired with the opportunity for application through CBPBL teaches students how to investigate and synthesize multiple findings to draw evaluative conclusions. The infographic's guiding questions provide students with needed structure and direction as they begin to develop their evaluative skills. As students further investigate their sources they begin to modify the listed questions on the wheel discovering more relevant questions to ask of their particular source.

The majority of the lesson is spent on our version of CBPBL, group-based application of evaluation strategies to case studies. Our five case studies include a citation and a description of how the case study subject intends to use the source. Our case studies are outlined in Table 1, which also includes our rationale for creating each one and the major points the librarian can offer students as evaluative advice.

**Table 1: Case Study Overview**
**\<Placeholder; Editors will place Table here in final doc\>**

After working through the portions of the wheel, teams of students answer a set of summary questions:

- Is this source relevant? How does the source type and information align with the researcher's purpose and audience?
- Is this source reliable? What criteria did you find most useful when making this decision?
- Should the researcher use this source or find another? If you recommend finding another source, where should they begin their new search?

Groups then present their cases to the class, sharing their evaluation techniques and findings. In our experience, having students present ensures that they take the activity more seriously and take the time to organize their thoughts and resulting conclusions. After each presentation, the librarian briefly summarizes each case, adding detail, tips, and resources to what the students have shared.

## IMPLEMENTATION, ASSESSMENT, AND REFLECTIONS

We integrated reflection and assessment throughout our process of developing and implementing this lesson. We brainstormed and piloted an early draft of the lesson with library student employees and sought feedback from ENGL 2010 program leaders. We also discussed this and the other revised ENGL 2010 lessons at our LES unit retreats in the summer before implementation and at the end of fall term after using the new materials for the first time. Gaining LES' feedback and support throughout the instructional design process was key not only in improving the lesson, but also in providing a sense of collective ownership for all who would be teaching it.

Over the fall and spring semesters, librarians taught 78 sections of the lesson to 1,675 students. Librarians appreciated the chances for group work and the authentic evaluation and assessment options, while finding the lesson easy to teach and engaging overall. Most liked the selection of case studies, but some thought they could be improved or expanded upon to have more options for teaching. Librarians also suggested having students work in smaller groups and cutting the non-CBPBL elements in the interest of time. A clearer connection to other library days and assignments would make the lesson better, though some librarians did reference the evaluating sources lesson in later library sessions.

Librarians had the option of several means of student assessment, from informal observation to a formal instruction survey. We encouraged librarians to have students complete a "one-minute paper" exit ticket asking students what they learned and what they would still like to learn. This allowed librarians to follow up with classes, clarifying any lingering questions before the next lesson. Librarians could also collect the worksheets from student groups. Table 2 summarizes our general observations of how students interacted with each case study.

**Table 2: Case Study Observations**
**\<Placeholder; Editors will place Table here in final doc\>**

Overall, the lesson reminded students of the importance of using relevant and credible sources in their work, taught them a method of assessing these characteristics, and demonstrated how credibility and relevance work hand-in-hand to support the purpose of an information user. Students also appreciated discussions about when and why "academic" and "popular" sources are or are not useful in academic writing. Students looked forward to the next steps of learning where and how to find sources, citing them, and integrating them into a well-argued research paper. Because the lesson opened up questions of bias, students expressed they would like more help identifying bias and knowing if and when a source with bias might be okay to use. This is an area, as has been pointed out in the literature, where developing a common vocabulary with ENGL 2010 instructors would be useful (Carter & Aldridge, 2016; Holliday & Rogers, 2013).

## CONCLUSION

While one-shot instruction creates challenges in all information literacy instruction, it is especially difficult to manage when teaching a complex process like source evaluation. It is impossible to prepare students for every source and scenario they will encounter when evaluating information in their real lives. The lesson is designed to make the most of our limited time with students, whetting their appetites and introducing them to general evaluative strategies in a clear, engaging, and memorable way.

While this lesson has been successful in building student confidence, we plan to use our assessments and reflections to improve the lesson for future library instruction. In order to better represent the range of sources students may encounter, we plan to expand our case studies to include non-textual sources like images and videos, as well as more deceptive sources (like "fake news" outlets) that would require students to engage more deeply in lateral reading. In order to ensure that our case studies stay relevant, we plan to update them regularly to reflect current issues.

Other ways that we could improve the lesson would require greater collaboration from our partnering ENGL 2010 instructors. For example, the case study lesson could become more traditional PBL through a more programmatic approach wherein students would use the context of our case studies in all three of the library instruction sessions. This would allow students to build research strategies and synthesis skills using the same case study assigned to them during the session on evaluation. We would also like to include a reflection at the end of the lesson or a prompt for instructor-led discussions for the following class session. Integrated library instruction can often feel disjointed from the overall course curriculum. Having the case studies serve as a through line, having students reflect on what they learned, and having instructors reiterate why those skills matter in the context of the course could further motivate students to put the skills we teach into practice.

If you are interested in using this lesson at your own institution we offer the following practical advice:

- Adapt or create case studies that are relevant for your students and the course. Familiarize yourself with them before instruction.
- Think about your teaching style for CBPBL. Aim to be more of a facilitator rather than instructor during the case studies, since allowing students to grapple with the challenges of their sources leads to better discussion and debrief when the class reconvenes as a larger group.
- In a shorter session, omit other elements from the lesson before reducing group work time, as this is at the heart of CBPBL.
- The recommended group size is five students or fewer. For a large class, consider having multiple small groups work with the same case.

## ACKNOWLEDGEMENTS

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The complete lesson plan (including lecture talking points), slides, case studies, and handouts are available at: https://libguides.usu.edu/2010lessons/f2f.

| Lesson title | Course |
|---|---|
| Evaluating Sources | English 2010 (Face-to-Face) |

**Learning goals**
- Students will brainstorm, discuss, and practice applying evaluation criteria to a variety of source types in the context of case studies.
- Students will use MLA citations to locate sample sources using multiple search platforms.
- Students will reflect on source reliability/credibility, usefulness, and bias through writing, discussion, and group work.
- Students will independently apply evaluation strategies to one source from their chosen Argument Analysis essay.

**Framework connections**
- Authority is Constructed and Contextual
- Searching as Strategic Exploration

| Preparation/prerequisites for instructor/students | Preparation and materials for librarians |
|---|---|
| Prior to the library session, **instructors** will:<br>• Frame the lesson: This lesson complements the Argument Analysis assignment (which students have begun by the time of this library session) by helping students develop criteria and strategies for critically evaluating the sources cited in their chosen essay in support of the author's argument.<br>• Indicate how this lesson will help in source evaluation and selection for the PRE at the end of the term.<br><br>Prior to the library session, **students** will:<br>• Complete the Academic Search Premier "Guide-on-the-Side" tutorial (to help with the background research required in the Argument Analysis assignment)<br>• Bring their selected Argument Analysis essay (and its Word Cited page) to class | Prior to the library session, **librarians** will:<br>• Touch-base with instructor<br>• Prepare an introductory message to the class, in the form of a video, Canvas message, or email<br>• Answer any student questions about the Academic Search Premier "Guide-on-the-Side" tutorial |

| Materials needed | |
|---|---|
| • PowerPoint<br>• Evaluation Worksheets<br>• Copies of Evaluation Wheel Infographic<br>• 5 Case Study Cards | • Whiteboard and markers<br>• Redesigned "Evaluate" tab on the 2010 LibGuide (includes infographic and links to helpful resources like Snopes, AllSides, and CQ Researcher) |

| Lesson Overview | | |
|---|---|---|
| **Learning activities** | **Description** | **Estimated time** |
| **Introduction** | • Librarian introduction, contact info, ways to get help, and two more library sessions this semester<br>• Goals for session | **3 mins** |
| **Think, Pair, Share warm-up** | • Think, Pair, Share on the prompt: *"How do you decide if information is credible or useful? Why is this important?"*<br>   ○ Think: Individual free-write (2 mins)<br>   ○ Pair: Chat with neighbor (1 min)<br>   ○ Share: Large group report-out, with librarian (or students?) writing/mapping responses on the white board (4 mins) | **7 mins** |
| **Mini-lecture** | • Present the evaluating sources infographic, making connections back to students' ideas during the warm-up exercise<br>   ○ One slide per slice of the infographic to break it down<br>   ○ **[Talking points available in full lesson plan]**<br>• Point out the following:<br>   ○ Sources aren't just automatically "good" or "bad" – it's often more complicated than that, and also depends on your "Why"<br>   ○ Thoroughly evaluating a source takes *time* and *effort* – you have to be an information detective<br>   ○ It also takes *practice* – which we'll do together today (and a librarian can always help in the future) | **7 mins** |
| **Small group application**<br><br>*Librarian will collect one worksheet per group, though each student will have a copy for notes.* | • Students work in 5 groups (approx. 4 students each). Each group is given a different case study card. Each case study card has a source in MLA citation, researcher profile, and context description. The sources represent a range of types and levels of reliability.<br>• Groups use the citation to locate the source, identify its type, and skim it. **(5 mins)**<br>• The groups then complete the worksheet together. The worksheet requires students to investigate each of the elements of the infographic, documenting their process as well as their evaluative conclusions. **(10 mins)**<br>• After investigating their source, groups respond to three reflection questions on the back of the worksheet. **(5 mins)** | **20 mins** |
| **Large group sharing and discussion** | • Each group will briefly present their source to the class by sharing their answers to the three reflection questions. **(max. 4 mins per group)**<br>   ○ Each source is represented on a PowerPoint slide<br>   ○ Librarian will support presentation by amplifying, questioning, and soliciting questions and observations from the class<br>   ○ Librarian will point out a helpful resource for each source type (also listed on the PowerPoint slide), such as AllSides.com, Ulrich's, etc.<br>       ▪ These resources are linked on the LibGuide for follow-up | **20 mins** |
| **Individual application**<br><br>*Instructor has the* | • Students select one of the sources from their selected Argument Analysis essay's Works Cited. They practice the evaluation process on their own (using a clean copy of the same worksheet used in the small group exercise. The | **15 mins** |

| option of collecting these worksheets for assessment and/or credit. | librarian and instructor circulate to help. | |
|---|---|---|
| **Exit ticket and conclusion** | • Students complete an exit ticket listing 1) one thing they learned and 2) one question they still have. | **3 mins** |

**Assessment artifacts**
- List on the board from Think, Pair, Share
- Group worksheets
- Exit ticket responses
- Optional: Individual worksheets

**Follow-up Tasks for Librarians**
- Summarize trends in group worksheets and exit ticket responses in a Canvas message to the class within one week of the session (see template). Return worksheets to instructor to be given back to students.

# Images for Tables and Figures (Editor will put in body of the text later)

**Table 1**

| Name | Context | Rationale | Evaluative Advice |
|---|---|---|---|
| Oliver | Using a satirical website to back a business plan | Discuss the difference between fake news sites and satirical websites | Look at the About page of the website, look for other research or reactions about the website, check references |
| Willow | Using an irrelevant scholarly article to petition city council | Discuss the importance of sources being both credible and useful | Verify the author's credentials, use headings to skim article, investigate publication (Ulrich's) |
| Eric | Using a popular source in an English 2010 essay | Discuss credibility of popular sources and using them in academic writing | Use Google and snopes.com to help fact check the article |
| Brie | Using a blog for health advice | Discuss credibility of blogs and conducting investigative research as part of the evaluation process | Do own research on the topic, check references (is the author cherry-picking?) |
| Leo | Using a potentially biased news source to lobby a senator | Discuss bias, use of emotion, and how to counteract one-sided sources | Seek out multiple sources on the topic, use allsides.com as a future resource |

**Table 2**

| Name | Observations |
|---|---|
| Oliver | Some groups struggled labeling source type and needed prompting to identify satire. Most who were tricked didn't look at the about page or search outside the source to fact-check. Even if the source was taken seriously, many groups rejected it because of it being outdated and having questionable methods (i.e. concern about sample size) and conclusions. |
| Willow | All groups successfully identified this as a peer-reviewed journal article, though many assumed peer-reviewed rather than verifying. Reasons to assume credibility included: academic authors, extensive academic citations, and the data collected and presented in the study. Alternative sources with higher relevance could be articles focusing on other health benefits of hammocks (e.g. mental health) or tied more specifically to the city council's reasons for banning them. |
| Eric | Most groups identified the author's experience and use of statistics as indicators of credibility, though they found the article biased because of its focus on a single player. Most recommended using the source (even though it was a "popular" source), but finding others to complement it. |
| Brie | Students' conclusions about this source depended on how they viewed the author and his sources, and whether or not they looked up any information outside the source. Some saw the author as credible because he is a medical doctor, but others questioned his training and lack of oncology background. Some groups considered his sources to be good (e.g., citing a Harvard study), while most saw them as too old to represent the most recent research in medicine. Those who didn't look deeply into Goop.com or search for the topic outside the source (to find information about recent lawsuits, response from the American Cancer Society, etc.), were less likely to identify this source as problematic. Most students were skeptical, however, and recommended finding a different source to share. |

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| Leo | The majority of students suggested Leo use another source, arguing that an opinion piece is not credible or informational (needed more balanced evidence and facts) and too biased. Some saw this bias as an asset, as it aligns with Leo's views and is attention-grabbing. The fact that this piece is from the *Washington Post* was reason enough for some students to reject it; they saw this publication as left leaning and newspapers problematic in general. The way students felt about the authors being the editorial board (which most identified and investigated) was interpreted positively or negatively depending on their views of the paper and the issue of gun control in general. Most saw it as detrimental, adding bias through anonymity within the group. Some saw it as an asset, arguing that this group writing process involves professionals arriving at consensus. Groups all critiqued the lack of multiple perspectives and the sources used, characterizing them as more opinion-based than fact-based. |

**Figure 1**