TEACHING RESEARCH PRACTICES

LIBRARY RESEARCH

Students who are early in their academic careers are often unfamiliar with and intimidated by the large holdings of our library collections; yet, to succeed at the University of Washington, they need to learn basic research skills. One great advantage of the CIC classroom is the immediate access to research materials it makes possible. It is easy to conduct a very effective library orientation from the computer classroom and to create integrated assignments that help students to develop these skills.

Below is an image of the library homepage navigation bar. Notice the "ask us" service, which links to a librarian ready to chat live with students about all of their research questions.

PLANNING A LIBRARY ORIENTATION

1. Invite a research librarian to your class to conduct a general library orientation or a library research session connected to a particular assignment. Not only can the librarian help your students develop effective search strategies, but he or she can also discuss how to evaluate both print and Web resources. To arrange for a librarian to visit your course, visit the library's page for Teaching Support for Faculty and Instructors.

2. Prepare your students for orientation day by using the library's online research tutorial called Research 101. This tutorial is a basic introduction to the research process. It is not customized for the UW library system in particular. It is modular, so you can choose the pieces of it you would like your students to experience. Some of the modules include worksheets and quizzes. The tutorial can be completed in class or out of class.

3. Direct your students to the library's extensive set of web tutorials some of them videos, on searching for the various kinds of resources available in the library, as well as the for the basic steps of the research process. These tutorials can be watched from home as preparation for a research orientation and also incorporated into a Go-Post freewrite about previous research experiences.

4. Conduct your own orientation to stay closer to the assignments and outcomes of your course. Instructors who are more experienced with the UW library system often opt to conduct their own library orientation session because they can more fully integrate the session with a course assignment, topic area and the outcomes. To get students started, consider doing a Library Assessment or Library Search exercise. These in-class activities are dynamic ways to get students engaged with the library's resources in a general way.

INCORPORATING LIBRARY RESEARCH INTO ASSIGNMENTS AND IN-CLASS ACTIVITIES

Scholars don't do scholarly research in general, they do disciplinary research within often a very narrow field. Rarely will scholars enter high level search terms, such as "women" and "education" into a search engine such as WordCat to turn up sources from across many disciplines and hundreds of journals and other
publications—a practice that beginning researchers might consider the natural first step to academic research. In fact, scholars are more likely to search only a few journals within a field, or, to search using highly specialized search terms such as an author’s name or disciplinary jargon. This kind of more effective, but also advanced, research practice is out of reach to beginning students, unless we scaffold assignments and in-class activities to direct them through the process and that provide the disciplinary knowledge that they need to be an effective researcher within the content area of our course.

Students will get a better sense of how scholars really do research and will find doing research a more relevant and satisfying practice if your research assignments and other assignments are fully integrated. For example, this Integrated Library Research assignment is in two parts to prepare students for the final researched essay. First, students are asked to find sources on a particular film from the course and to answer annotated bibliography-type questions. Secondly, students are asked to select one source that is particularly relevant to their research essay to analyse more carefully. Finally, students are ready to continue with a focused research process for the research essay.

INTERNET RESEARCH

Teaching a CIC course is an excellent opportunity to spend time teaching students better research practices for online research.

We are in a strange time when it comes to incorporating use of the internet into teaching academic research skills. Long gone are the days when categorical statements such as "Wikipedia is not appropriate for academic research" made any sense to students. In fact, such statements are more likely to reduce the credibility of the instructor, as anyone can see that a resource like Wikipedia has a great deal of use in both academic and non-academic contexts. Yet, Wikipedia, and the web at large, remains a minefield of partial and mis-information that researchers lacking deep domain knowledge in their area of research remain vulnerable to.

Research also shows (Kvavik 2005) that undergraduate students tend to overrate their ability to be critical users of the web. Teaching online research practices, an aspect of information literacy, is no longer about setting up boundaries around what is and is not considered "academic," but about teaching students the capacity to critically evaluate sources and information they find on the web.

The approach for teaching online research explained below is the outcome of a multi-disciplinary research project at the University of Washington from 2007-2009. The "Q6C Solution" can be used as a heuristic for planning lessons on research practices and/or writing research assignments, or it can be used as a tool to guide students through a process of critically evaluating sources and information they find on the web. The materials presented below can be adopted "as is" for use in a lesson or assignment about research practices in a CIC course.

EVALUATING INTERNET SOURCES: THE Q6C SOLUTION

WHERE DID THE Q6C SOLUTION COME FROM?

The "Q6C Solution" grew out of the growing dissatisfaction of the researchers with the source evaluation checklists common to most writing handbooks. In general, the checklist approach to source evaluation encourages students to consider only superficial characteristics of an online source. Below is an image of a checklist from a popular writing handbook and an explanation of the limitations of this checklist (the blue bubbles).
In response to their dissatisfaction with this checklist, the researchers began to conceptualize a more realistic model for how researchers, in both academic and non-academic contexts, go about deciding whether a source is both credible and useful for a given research scenario. This "cloud" of "C" elements (see image below) models the complex and recursive process of critically evaluating a source. The relative importance of any given element, say "Characterize Authorship" or "Contextualize," will vary with the value a particular discipline or field of knowledge places on it. The value placed on a particular element for a particular field of knowledge is part of what a researcher new to that field needs to learn. Often these values are tacit knowledge for experienced researchers in a field, which makes them hard to articulate and teach.

WHAT TEACHING PROBLEM DOES Q6C HELP ME SOLVE?

It can be frustrating for instructors when students settle too easily for the first source that seems to provide an answer to their research question. Often this "settling" is an outcome of not knowing what makes one source better than another. Beginning researchers in a field need to be taught explicitly what counts as a "best" source in a given field of knowledge. The Q6C model can function as an heuristic for an instructor to raise his or her awareness of the most valuable "C" elements for identifying a "best" source in a given research scenario, or it can function as a tool for students to guide their process of evaluating sources. Either
way, the goal is to make the researcher, experienced or newcomer, more aware of the elements of a critical evaluation process. With a greater awareness of what it is required to know to adequately evaluate a source, instructors can include this knowledge in a lesson, and students can better know what questions to ask before rushing to assume that a source is in fact a credible and useful one.

AN EXAMPLE OF Q6C AT WORK

The image below illustrates a Q6C critical evaluation process for a research question and research scenario in a fictional college-level geology course. This scenario was used as part of a lesson on the critical evaluation of online sources in an intermediate composition course. The "first hit" source, a government website, contained most of the information needed to answer the research question. However, when the research scenario is taken into account, it is not appropriate as the citable source for this information. A novice researcher, however, may not have the knowledge that a government website likely contains secondary information that may be subject to bias and/or incomplete, and that in a scientific context such a source would not be considered the most credible source for this information. During this lesson, most students did not continue to search for the primary, scientific source of this information because they originally saw no need to. In this case, teaching students to look for primary corroborating sources in the reference section of the online document was the key to prompting them to find the "best" source.

The evaluation process visualized below begins at the green arrow with the "1st hit" and ends with the conclusion that the "3rd hit" is the most relevant and credible source given this research scenario.

USING Q6C AS A TOOL FOR RESEARCH LESSON AND ASSIGNMENT DESIGN

When assigning research assignments, it is important that the instructor is aware of what students need to know about the research scenario and the field of research in order to avoid setting them up to "settle" on a source prematurely. This knowledge can then be scaffolded into the course via explicit lessons or assignments.

The heuristic illustrated below prompts an instructor through the process of designing a lesson or assignment requiring students to do research. Most importantly, it prompts instructors to use the Q6C model to identify their own tacit knowledge and practices for doing research in their field so that these can then be explicitly taught in the course.
QUESTIONS FOR INSTRUCTORS TO CONSIDER WHEN PLANNING RESEARCH LESSONS AND ASSIGNMENTS

- How do experienced researchers in a field know when they have found a "best" source?
- What do experienced researchers in a field know about what makes a source a "best" source that newcomers don't know?
- How can newcomers to a field be supported to do research with the savvy of experienced researchers?

THINGS TO CONSIDER WHEN USING Q6C TO PLAN A LESSON OR AN ASSIGNMENT

- Will you prepare an archive of relevant sources for the given research scenario for students to search within, or will you set students loose on the open web (or the library)?
- How will you weight the student's research process in the evaluation of an assignment?
- Will you explicitly teach the "C" elements, or will you prompt students to deduce them by guiding them through a research process in class. Having a prepared archive can be helpful for this approach.

TEACHING Q6C AS AN EXPLICIT TOOL FOR EVALUATING ONLINE SOURCES

Q6C can also be taught explicitly to students as a tool for supporting them through a more critical evaluation of online sources. As with the instructor's heuristic approach above, the outcome of this approach is to make students more aware of what they need to know to evaluate the credibility and usefulness of a source for a given research scenario. It is very important that the emphasis of a lesson or an assignment incorporating the Q6C model avoids being a lesson on the abstract elements of the model itself, and thus just another, albeit more complex, checklist approach. Another way to think of the Q6C model is as a model of a way of thinking, or a habit of mind. Students can use the Q6C model as a crutch for helping them maintain a critical stance towards a source, but the model must be used to complement instruction in the research practices of the field within which the research is being done.

Sample assignments that have successfully improved the quality of student source evaluation by teaching the Q6C model explicitly are included in the Sample Assignment section below.

SUGGESTIONS FOR TEACHING WITH Q6C

- Identify which components of Q6C you want to emphasize and scaffold the assignment's research process so that students learn new skills incrementally.
- Teach that research is about a process, not about a product.
- Construct assignments that engage your students in authentic research practices for your target...
discipline.
- Make explicit the outcomes of the assignment and encourage reflection to help move students to the meta-cognitive level.
- Consider choosing research topics that you are not an expert in so that you can share the discovery process with the students.
- Perform the assignment yourself or with a colleague prior to class in order to anticipate student responses.
- For more information contact...

SAMPLE ASSIGNMENTS AND STUDENT WORK

SAMPLE ASSIGNMENTS

- Website Analysis Assignment
  This assignment was developed using the Q6C model. It was developed for a history course, but it can be adapted to an English or writing course.
- Q6C Student Handout
  This handout was developed to summarize the elements of Q6C for students. It was developed for a history course, but can be adapted to an English or writing course.
- Library Search Exercise
  This is a version of a library “scavenger hunt” exercise. It allows students to become comfortable with the library’s catalogue and information system. It simulates some of the typical problems that students encounter when doing library work and shows the strategies for resolving these problems by themselves.
- Library Assessment Exercise
  The assessment can be projected onto the screen. Students answer a series of specific questions and exchange knowledge about the libraries with each other. It provides the instructor with a sense of their familiarity with research skills.