

Information Literacy and Teaching with Technology

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Because technology allows us to use, manipulate, store, and manage information differently, we must—with our students—develop new sorts of literacy and a wider range of skills with respect to the information we deal with in our studies.

In the past, we have occasionally taken the structure and theoretical frameworks of our respective fields for granted. Without ever discussing these matters with our students, we frequently assumed that they—and we—knew what “geology” was or “algebra” or “poetry,” that we were clear on the anatomy of our work because that anatomy was self evident—a poem is a poem, literature is literature, and equation is an equation. But now that we all—from the youngest of students in the primary grades to the most venerable of scholars in research institutions—create, format, reformat, move, and manage information with digital resources, the information *structure* of our work has come more fully to our attention.

We find that our teaching now involves the need to guide our students toward an understanding of the kinds of knowledge, research, questions, studies, and activities appropriate to the subjects they are considering with us. Talking about how information comes to be created, discovered, analyzed, and evaluated in our disciplines has become as central to our work as the actual study of the matter of our field. Our gaze has moved to the meta level at which information about information is our concern.

Background on Information Literacy

**THE AMERICAN LIBRARY
ASSOCIATION**

The Presidential Committee on Information Literacy of the American Library Association¹ declares that to possess information literacy an individual must “be able to recog-

1. American Library Association. *Presidential Committee on Information Literacy: Final Report*. (Chicago: American Library Association, 1989). <http://www.ala.org/acrl/nili/ilist.html>.

nize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.” As early as 1989, the ALA identified information literacy as “a survival skill in the Information Age.”

**THE ASSOCIATION FOR
COLLEGE AND RESEARCH
LIBRARIES**

The Association for College and Research Libraries elaborates the principles set forth by the ALA in emphasizing the importance of information literacy in the whole life of the educated individual: “Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning.”

The ACRL goes on to identify five abilities that the informationally literate individual will call upon repeatedly. In any situation—personal or professional—that individual will be able to

- determine the extent of information needed,
- access the needed information effectively and efficiently,
- evaluate information and its sources critically,
- incorporate selected information into one’s knowledge base,
- use information effectively to accomplish a specific purpose,
- understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally.¹

**CALIFORNIA POLYTECHNIC
STATE UNIVERSITY**

Seeking to merge the goals of information literacy with the skills of computer competence, librarians and faculty at California Polytechnic State University shape the skills of the information literate individual in terms of his/her mastery of these abilities:

- define the research topic,
- determine the information requirements for the research question,
- locate and retrieve relevant information,
- use the technological tools for accessing information,
- evaluate information,
- organize and synthesize information,
- communicate using a variety of information technologies,
- understand the ethical, legal, and socio-political issues surrounding information and information technology,
- use, evaluate, and treat critically information received from the mass media.²

1. Association of College and Research Libraries. *Information Literacy Competency Standards for Higher Education*. (Chicago: American Library Association, 2000). <http://www.ala.org/acrl/ilintro.html>.

2. California Polytechnic State University: *CSU Information Competence Tutorials*. (San Luis Obispo, 1999). <http://www.lib.calpoly.edu/infocomp/modules/index.html>.

Information Literacy and Your Discipline: A Preface to Teaching

The purpose of this worksheet is to allow you to delineate the information structure of your discipline and to use your delineation to offer instruction which fosters in your students information literacy *and* computer competence. Some questions overlap two areas, and some questions are repeated in more than one category because the issues are complex. These issues are also theoretically charged, but if you find them engaging, I encourage you to consult with the experts—your library faculty.

INFORMATION STRUCTURE

- What constitutes information in your field?
- Does your field of study involve different levels of information (for example: primary, secondary, data, metadata)?
- Where does information in your field come from?
- How is it collected?
- Who collects it?
- Is this information commented upon?
- Who comments upon it?
- How is information stored?
- Where is information archived?
- In what format is information in your field presented?
- In what form is commentary upon information in your field presented?
- Which media are most important in the storage and presentation of information in your field?
- Is information in your field presented numerically, textually, visually?
- Are sounds an important component of information in your field?

ANALYTICAL AND EVALUATIVE PRACTICES

- What do you do with information when you have it?
- On what basis are judgments about information or data in your field made?
- What kinds of judgments are made?
- Who has the credentials to make such judgments?
- How do individuals or groups achieve the credibility to make such judgments?
- Is some work with information in your field more valued than others?
- How do you determine which work in your field is to be taken seriously?
- Who—people or groups—are the standard setters in your field?
- In your area of study are some categories of information valued more highly than others?
- Who determines what sort of information is appropriate in your field?
- How is information accepted or rejected as reliable, valuable, or worthy? (What evaluative principles are used, and what sorts of professional reviews prevail?)
- What designates information in your field as the most highly valued or reliable? (source? author? kind?)

DISCOVERY AND SEARCH PRACTICES

- What constitutes relevant research in your field?
- How does one ask a relevant question?
- How does a researcher access information needed to answer questions effectively and efficiently?
- How is this information stored and where?
- Who determines which information will be stored?
- Are special skills needed to discover information in your field?
- If yes, what are those skills?
- How do you collect information in your field?
- Are there restrictions on who can collect information?
- Are legal, moral, ethical issues involved in the collection of information?
- How do you verify that your collection methods are reliable?
- How do you demonstrate reliability?
- How do you know when the information you have collected is valuable?

COMMUNICATION PRACTICES

- Who owns information in your field?
- How is information communicated in your field?
- How is it presented?
- Are special skills needed to present information in your field?
- If yes, what are those skills?
- Who communicates it?
- Do specialists in your field meet?
- Where? When? What do they do when they meet?
- How does one gain admittance to these meetings?
- How does one establish oneself as an authority?
- How are information sources and collections in your field physically and digitally organized, stored, and accessed?

HISTORY OF INFORMATION IN YOUR FIELD

- Can you name a point at which studies in your field arose?
- When did studies in your field become institutionalized in the university; that is, when did departments in your field of study emerge?
- From what other fields of study did yours derive its origins?
- Do these fields of study still maintain currency within the academy?
- Has the collection, analysis, evaluation, or presentation of information in your field changed over the years since the inception of this area of study?
- Can you trace the information structure of your field over the past two centuries or so?
- Over the past hundred years, how has the definition of appropriate information in your discipline changed?
- Does the ostensible value of information in your field change over time? That is, do certain sources of information fall out of favor or become more reputable as time passes?

Implications for Teaching

YOUR GOALS FOR YOUR STUDENTS

- If your students are to acquire both content and information literacy in your specific field, you might wish to outline a few goals for them, so determine first what you want your students to know about dealing with information.
- Consider how *you* convey information to your students. Will you model the communication, collection, interpretation, and dissemination practices of your field for them?
- Think, too, about how you will ask students to convey information in your field to you and to one another. Will they learn the practices as well as the content of your discipline? Will you require them to produce documents of the sort that specialists in your field produce?
- Consider how much information you will ask your students to gather and how you will have them use this information. Will they engage in the collection practices of those in your field? Will they understand the evaluative protocols to which they should subject this information? Will they learn to present and archive this information professionally, ethically, and responsibly?
- If you determine to make the acquisition of information literacy in your field part of your class, you need to consider how that element will enter into the evaluation of your students' work. You will grade them not simply on content, but you will also consider their mastery of collection, evaluation, presentation.
- If you wish to incorporate fundamentals of computer literacy into your assignments as well, you should be prepared to offer students assistance in using media resources, online communications protocols, digital archives and other tools which they would use as knowledgeable professionals.
- You may want to experiment with "closed" and "open" assignments. A closed assignment is one which limits the resources, the tools, and the scope of students' work so that they are not misled by inappropriate choices. Once they complete a closed assignment, they can attempt an open assignment. In the case of the open assignment, students have learned a sufficiently wide range of skills to allow them to complete a research or presentation project on their own. [I am indebted to Paul Adalian of the Cal Poly/San Luis Obispo Library for this approach.]

FUTURE PROJECTS

Academic librarians across the country are now focusing on assessment of information literacy. In fact, the AAHE Assessment Conference in late June (in Denver) will include a presentation concerning assessment of information literacy by two librarians from California State University San Marcos.

Further Reading

American Association of School Librarians. *Information Literacy Standards for Student Learning*. American Library Association Editions, 1998.

Breivik, Patricia Senn. *Student Learning In The Information Age*. Oryx, 1997.

Further Reading

--- and E. Gordon Gee. *Information Literacy: Revolution In The Library*. Oryx, 1989.

--- and J.A. Senn. *Information Literacy: Educating Children for the 21st Century*. NEA, 1998.

Ilannuzzi, Patricia and Stephen S. Strichart, Charles T. Mangrum, II. *Teaching Information Literacy Skills*. Allyn & Bacon, 1998.