

## Assignment 2

### Undergraduate students and critical thinking skills

In the first part of this assignment, I concluded that “most of all, undergraduates need to know how to evaluate sources, in print but especially on the Web, in order to determine their authority and accuracy. Critical thinking is, in my opinion, the most important and most elusive information literacy skill.” Critical thinking is the skill that undergraduates need more than almost any other, so that is the skill that my program is intended to teach.

#### Skills

Critical thinking is a complex process that should be at the center of every interaction with information. The Foundation for Critical Thinking defines critical thinking as

the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.<sup>1</sup>

Critical thinking pervades all aspects of the information cycle. It is a guard against misinformation and misunderstanding that should never be let down. The Foundation for Critical Thinking’s definition continues:

In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness. It entails the examination of those structures or elements of thought implicit in all reasoning: purpose, problem, or question-at-issue, assumptions, concepts, empirical grounding; reasoning leading to conclusions, implications and consequences, objections from alternative viewpoints, and frame of reference. Critical thinking - in being responsive to variable subject matter, issues, and purposes - is incorporated in a family of interwoven modes of thinking, among them: scientific thinking, mathematical thinking, historical thinking, anthropological thinking, economic thinking, moral thinking, and philosophical thinking.

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<sup>1</sup> “Defining Critical Thinking,” <http://www.criticalthinking.org/University/univclass/Defining.html>, retrieved 23 July 2003.

Critical thinking encompasses all disciplines and all situations. It is a skill whose practice neither is nor should be limited to the academic sphere. It means having the skills, using them consistently, and accepting on the results of critical analysis.

Clearly, critical thinking is far from simple, either to practice or to teach. Some even argue that it is a skill which must be learned rather than taught, and that the most that can be done is to facilitate or set the stage for independent learning. Neither can any one person ever be a complete and perfect critical thinker. As the Foundation for Critical Thinking states, “the development of critical thinking skills and dispositions is a life-long endeavor.”

In an academic library setting, the focus of critical thinking is most strongly on information-seeking. This aspect is particularly important because of the regrettable tendency of some undergraduates to do much of their research on the open Web, where the only filter is their own mind. Critical thinking skills are also necessary to the analysis, use, and presentation of information, though it might often be assumed, by people whose focus is on information-seeking, that solid research will lead inexorably to a solid research paper. However, it is my belief that all applications of critical thinking, at all stages, are equally necessary to a full grasp of the concepts and skills of critical thinking.

## **Motivations**

Unlike grade-schoolers, undergraduates are both capable and expected to take charge of their own learning and of its depth and direction. By their first or second year in an institution of higher learning, they have already had ample opportunity to encounter conflicting sources of information and to evaluate their quality. Opportunities for learning critical thinking skills are everywhere, both inside and outside the academic setting. Therefore, students who are going to figure it out on their own almost certainly have already done so.

Motivation is the key factor in whether students care to learn critical thinking skills on their own. The ARCS model is helpful in analyzing the factors in motivating

undergraduates in this fashion, particularly in relation to the findings from Dilevko and Gottlieb's study:<sup>2</sup>

- **Attention: low** "Critical thinking is boring and time-consuming. There are so many fun things to do instead. Why should I spend time on this when I can do my research the night before and still get an okay grade?"
- **Relevance: high** Students know that critical thinking is relevant to their assignments and that it will help them get a better grade.
- **Confidence: med** Critical thinking is hard, but everyone can do it.
- **Satisfaction: high** When they use the skills and get a grade that is higher than usual, they will feel the reward, and they know it.

Relevance, confidence, and satisfaction are typically high with respect to critical thinking skills in undergraduates. Unfortunately, attention is regrettably low, at least in those who lack the skills, because if they were willing to invest the time and effort, they would already have done so. Attention and relevance war with each other, leading to the common "I know I should, but I don't want to" sentiment. Lack of interest in learning critical thinking skills is the one factor that prevents it from happening spontaneously; thus it is the factor which has to be addressed in persuading students to learn voluntarily.

## Methods

Undergraduates are pressed for time. They can't make time for working on projects farther in advance than the night before it is due, and they certainly can't or won't make time to go to a library workshop about critical thinking, which they almost certainly view as non-critical. They know it might make the difference between an A and a B on an assignment, but in the continual triage situation of college life, a B is probably worth that extra hour of sleep.

Therefore, the challenge is to facilitate students' acquisition of critical thinking skills without requiring them to make time in the middle of an already-busy schedule. There are several possibilities for doing this, none of which are mutually exclusive. Firstly, reference librarians can seize the "teachable moment" whenever they help

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<sup>2</sup> Juris Dilevko and Lisa Gottlieb, "Print Sources in an Electronic Age: A Vital Part of the Research Process for Undergraduate Students," *The Journal of Academic Librarianship* 28 (2002): 390-1.

students, tactfully and cunningly reminding them about the importance of critical thinking. For example, if a source is particularly non-authoritative or biased, such as the official atlas of the Soviet Union, the librarian could discuss the reasons why it should be treated with extra caution. The same instruction could be seeded into the library's website, in order to make it available to students who do not contact librarians, either in person or digitally. Another fairly common method of library instruction is for a librarian to visit a professor's classroom in order to introduce students to the sources and skills necessary for a certain project they will be completing for that class. This information is very typically replicated on academic library websites in the form of subject guides and pathfinders.

All of these methods have strengths and weaknesses. Seizing the "teachable moment" reinforces the relevance of critical thinking to the immediate information need but requires that the moment exist before it may be seized. Since the reference interaction only exists on the student's initiative, it misses the unwashed masses of undergraduates to whom it never occurs that they might benefit from the services of a reference librarian. Similarly, leaving the instructional material passively on a website allows students to surf around or past it without absorbing the skills, if they don't care to devote the time or effort for mental exercise or even for reading the page.

The advantage of an in-class workshop is that the librarian would be able to address the students face-to-face, without requiring them to make time in their schedules for an out-of-class workshop or reference consultation. The disadvantage is that it requires the professor to make time amid an already-packed lesson plan. Such workshops tend to be as short as humanly possible and to cover only the bare bones of sources that are relevant to the class project. While critical thinking might bear a brief mention, there is certainly not enough time for any in-depth treatment, and it would most likely pass over the heads of the students who most need it.

The same disadvantage applies to online subject guides and pathfinders; people using those are looking for quick access to information, not commentary and text as would be necessary for critical thinking instruction. Furthermore, they might be using those subject guides and pathfinders as quick shortcuts to reliable information, thus lessening their need for strict critical thinking. Presuming that library subject guides will

not link to incorrect, non-authoritative information, warnings about the reliability of sources may be misplaced in that context.

## **Middle-men**

As Rothenberg admits, professors as well as librarians must take responsibility for teaching critical thinking skills to students.<sup>3</sup> Professors are the ones who hold the keys to Relevance motivation; if they teach the skills bit by bit, every day in class, and make it clear that lack of critical thinking will seriously affect students' grades, then students may begin to give it a higher priority. These skills must be taught in cooperation and collaboration with librarians, not in a one-off thirty-minute workshop. It must be a systematic brainwashing.

Professors themselves must be persuaded and educated to the task of critical thinking instruction. Some professors may view it as the duty of someone else (perhaps of high school teachers or of the academic librarians) to instruct students in the ways of critical thinking. Some may simply not know how to teach it, or how to fit yet another element into already-packed course syllabi. Librarians can help professors with integrating critical thinking into their normal instruction. The aspect of persuasion may necessitate proper application of the traditional, behavioral carrot-and-stick method.

Critical thinking is a skill which cannot be taught by any traditional, explicit method. The most that can be said explicitly, takes about five or ten minutes at most to say. A professor could build into his course introduction the course objective of developing and reinforcing students' critical thinking skills. He or she might define critical thinking and expound briefly on it. At most, the class might discuss the topic and its relevance and application. The rest is continual reinforcement of critical thinking ideas. For example, that reinforcement might occur through class discussion of texts or arguments, or through professor's feedback on assignments. Both written and oral expression should be used, both by the professor and the students, in order to allow students of various learning styles to participate equally. Student learning would then be assessed by the quality of critical thinking that they displayed in their subsequent academic work.

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<sup>3</sup> David Rothenberg, "How the Web destroys student research papers," *Education Digest*, 63 (1998):61.

## **Conclusion**

Critical thinking instruction does not fit easily into a traditional instructional model. It is a skill or set of skills that must be learned through experience and through trial and error. Therefore, the would-be instructor must set up situations where the student is confronted with problems that can only be solved by the application of critical thinking, so that the student has the opportunity to teach himself.