Critical Thinking in Web Courses:

An Oxymoron?

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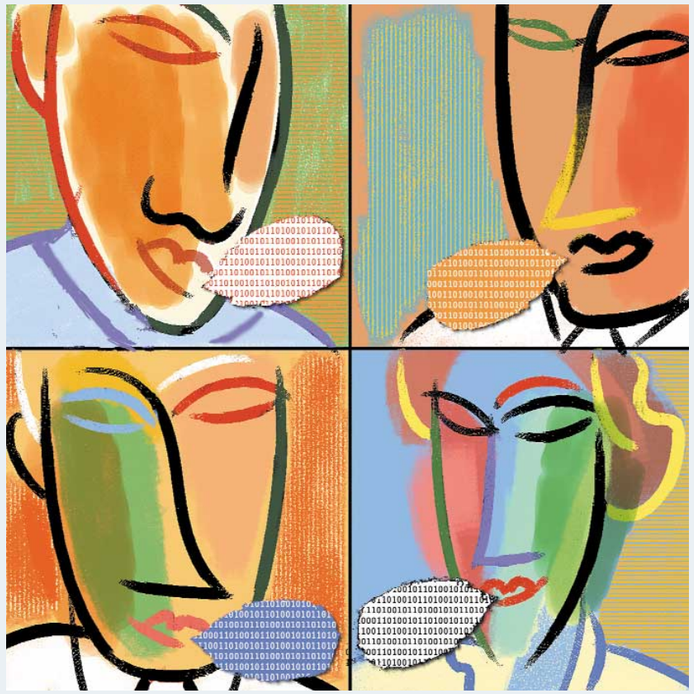

How many subtleties of a class discussion, and indeed the very structure of its development, rely on sight and sound: raised eyebrows, excited hand movements, the shrug of a shoulder, varying tones of voice? Without these signals, isn't an online discussion missing essential channels of communication? Isn't it just too impersonal to be effective?

When a face-to-face (FTF) discussion goes well, there's often an emotional energy in the room, a feeling of excitement and discovery. Tuning into this energy, participants bounce ideas off each other, building a structure of propositions and counter-propositions interspersed with questions and comments in an exchange of ideas that can be rich, thoughtful, and fresh. But how can this experience possibly manifest in an environment where the participants are not only invisible to each other, but are posting their comments on a computer at all times of the day and night? Where is the spontaneity and excitement of a discussion when, instead of responding immediately to a comment, participants must first log on, find and read a comment (one among, say, thirty other comments), and then write and post a response, which the recipient may or may not read and respond to for several days?

To faculty unfamiliar with online teaching, this and other limitations of asynchronous discussions can lead to the conclusion that online discussions are a poor substitute for FTF discussions. Can sophisticated critical thinking be fostered in an asynchronous environment? Are students really engaged with the material and with each other's ideas? Is there really such a thing as a good online discussion?

Face-to-face discussions depend not only on speech, but also on gestures and subtle nonverbal clues. Online conversations rely strictly on the written word. Can an asynchronous environment foster substantive critical thinking? Here, David Lang establishes the online discussion as a golden opportunity for developing high-level thinking skills.

Critical thinking, defined broadly as a dialogical process that produces an increasingly sound, well-grounded, and valid understanding of a topic or issue, involves participants developing and examining their ideas as fully as possible, presenting them clearly and credibly to others, and examining and challenging the ideas of others. In other words, critical thinking happens in good discussions. While the problems of asynchronous discussions do not go away, their reliance on writing, their time lags, and the absence of nonverbal communication present both students and faculty with the opportunities, the means, and the motivation for thinking critically.

Online Features for Critical Thinking

For years, proponents of Writing-Across-the-Curriculum (WAC) have been saying that students learn when they formulate their ideas in writing. Although the extent to which faculty have adopted WAC approaches has been limited, suddenly, without any push from WAC adherents, students and faculty in online discussions find themselves in a WAC paradise.

Unlike speech, writing is reviewable. The words do not disappear, but are recorded. Thus writers can read, reread, and revise their comments—in the process discovering and developing what they mean—all before the reader sees them. In other words, writers don't need to "say" anything until their words are thoughtful and clear. Furthermore, unlike FTF participants, who are often competing for the attention of the moderator, online participants have an equal opportunity to "speak." The opportunity itself can last a week instead of just a few moments. And the participants cannot be interrupted. Thus, while the time lag of asynchronous courses can certainly reduce the spontaneity of a discussion, it can also provide opportunities and means for thoughtful exchanges.

But are participants motivated to write well, aside from the incentive of earning favorable reviews and high grades? One motivational factor is the need people have to represent themselves favorably to others. People want—Maslow would say need—

Illustrations: Susan LeVan/ArtVille

Online Strategies *FOR* Teaching Thinking

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In an online course, teachers can employ many traditional classroom active-learning strategies to encourage good thinking, engage students in the course content, and promote intellectual development.

1. Design self-testing quizzes and tutorials on basic chapter content.
In a Web course, the usual source of course content is a textbook and teacher-written text, so it is important for students to self-test understanding of their reading. If test-writing software is not available, an easy method is to post questions in one file and post models of good and poor answers (with commentary) in another file. Instructors can use the quiz as a gateway to the online discussion, allowing only those students who pass the quiz into the discussion.

2. Apply the concepts of the textbook chapters to cases or issues every week.
Asking students to apply course concepts in informal writing tasks such as homework assignments is probably the most obvious and frequently used approach to promoting thinking. Responses can be written by groups or individuals, posted publicly in the conference, or collected in a student's assignment portfolio. In small groups where there is a single written response to teacher-posed problems, thinking is clarified as students consider several perspectives and negotiate the language to articulate their response.

Informal writing tasks on course-based topics are especially good for promoting course-based thinking. Private, personal applications can be placed in assignment folders; less personal topics can be placed in a public conference. Colleges with writing across the curriculum programs are likely to have a rich collection of tasks available through their teaching and learning centers. Asking 25 students to respond individually to one scenario or topic in a conference may result in thoughtful responses from the first three responders and "I think so, too" from the remaining 22. To avoid boring repetition, variations of the scenario or topic can be posed to a smaller group of three or four students. For example, ask for individual responses to Scenario 1 from students whose last names begin with A-C, to Scenario 2 from D-G, and so on.

3. Pose well-designed questions for asynchronous discussion.
Here is the ubiquitous Bloom higher-order thinking taxonomy and typical objectives within the categories:

- **Knowledge.** Identification and recall of information: tell who, what, when, where, how; describe.
- **Comprehension.** Organization and selection of facts and ideas: retell, state the main idea.
- **Application.** Use of facts, rules, principles: use example, relate, explain significance.
- **Analysis.** Separation of a whole into component parts: break down into features,

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both to be accepted and to excel. In FTF discussions, the major channels through which people meet these needs are nonverbal. Online, however, the nonverbal channels are not available, so in order to represent oneself favorably to others, one must write well. In addition, because online writing is published and can remain "on the public record" for weeks, the significance of the writing increases.

Of course, writing also takes place in FTF classes (usually for homework assignments and term papers), but is often not perceived as "real world" communication. It is, instead, seen as a method of communication whose purpose is limited to students' demonstrating knowledge and thinking skills only to the instructor, who probably already knows the topic very well. Papers may even be delivered to the instructor, only to disappear completely or to be returned with a few marginal comments and a grade—barely dialogical.

In an online discussion, however, writing is very much dialogical. In addition to the instructor, there is an audience of peers whose role is not to evaluate for a grade but to explore and develop ideas together. They are interested in discussing ideas to further their understanding. This communicative purpose in the writing process is what many composition teachers aim for in having students share their writing in small groups, for there students take more care with—and therefore think more carefully about—writing that has a real purpose for a real audience. Online, that purpose and that audience are an integral part of the environment.

Instructors in online classes also can divide participants into small groups, and even though all the conversations are happening simultaneously, the instructor can be present in all the groups at the same time. What effect does this "omniscient" instructor have on the quality of discussions? The effect will likely be to raise the level of focus and the quality of thinking in the small groups. In an FTF class divided into small groups, the instructor has limited time and opportunity to answer questions and requests for help from the various groups. Online, however, there are fewer limitations. The instructor can respond to each group's concerns, analyze the quality and direction of work, and guide the groups individually.

Finally, there is the fact that the Web is a marvelous resource. Although students in FTF classes can just as easily log on and research the Web when they are writing a paper out of class, students online have the time to incorporate any resource—Web-based or traditional—into their comments in the middle of a discussion. This opportunity enables participants to present more credible, richer, and more thoughtful contributions to online discussions than they might in FTF courses.

Strategies that Encourage Critical Thinking

Perhaps the most balanced conclusion one can come to about the quality of thinking in online discussions is that the potential is there for both success and failure. Some discussions fail miserably, while others are spectacularly successful. The probability of success, and thus of quality thinking by students will likely be increased if the instructor is a skilled facilitator.

Much has been written in the literature about facilitation skills. The following checklist selected from *Learning Networks* by Harasim, Hiltz, Teles, and Turoff (from "Teaching at an Internet Distance") is a useful summary of advice for online facilitators:

- Do not lecture
- Be clear about expectations of the participants
- Be flexible and patient
- Be responsive
- Do not overload
- Monitor and prompt for participation.

For assignments, set up small groups and assign tasks to them.

RESOURCES

Bonk, C.J., Cummings, Jack A., Hara, Noriko, Fischler, Robert B., Lee, Sun Myung. "A Ten Level Web Integration Continuum for Higher Education: New Resources, Partners, Courses, and Markets." (March 22, 2000).

Funaro, Gina M. "Pedagogical Roles and Implementation Guidelines for Online Communication Tools." Asynchronous Learning Networks Magazine 3.2 (1999). (March 22, 2000).

Picciano, Anthony G. "Developing an Asynchronous Course Model at a Large, Urban University. Journal of the Asynchronous Learning Networks 2.1 (1998). (April 6, 1999).

"Teaching at an Internet Distance: the Pedagogy of Online Teaching and Learning: The Report of a 1998-1999 University of Illinois Faculty Seminar." December 7, 1999.

Wegner, Scott B. "The Effects of Internet-based Instruction on Student Learning." Journal of the Asynchronous Learning Networks 3.2 (1999). (March 22, 2000).

Also:
- Be a process facilitator
- Write weaving [summarizing] comments every week or two
- Organize the interaction
- Set rules and standards for good netiquette
- Establish clear norms for participation and procedures for grading
- Assign individuals or small groups to play the roles of teacher and of moderator for portions of the course
- Close and purge moribund conferences in stages
- Adopt a flexible approach toward curriculum integration on global networks.

Facilitating a Dialogical Process

The basic challenge for teachers in asynchronous discussions and teachers in FTF discussions is the same: to facilitate the engagement of students in a dialogical process that produces increasingly sound, well grounded, and valid understanding of a topic or issue. While online discussions are relatively new environments featuring time lags, writing, and the absence of nonverbal channels of communication, they are not environments inimical to facilitation. In fact, they present a special combination of means, opportunities, and motivation, which can encourage in both students and faculty substantial critical thinking.

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classify, outline or diagram, compare/contrast, present evidence.
- **Synthesis.** Combination of ideas to form a new whole: predict/infer, add ideas to, create/design, combine, suggest solutions.
- **Evaluation.** Development of opinions, judgments, or decisions: agree/disagree, explain, prioritize, decide, assess.

4. Create cognitive dissonance: provoke discomfort, unsettle confirmed notions, uncover misconceptions, inspire curiosity, pose problems.

The point here is not to befuddle students, but to dispel complacency by creating cognitive dissonance. Accompanying a disorienting intellectual situation is a wish to resolve it. Students who experience a gap in their knowledge will seek to fill it. For example, an instructor can design a task that uses students' prior knowledge but also requires new information or procedures that the students do not know. Students become aware of a gap between the task's goal and what they need to know or do to achieve it; creating this need to know in students is a basic strategy underlying inquiry learning and problem-based learning. Socratic questioning is a variation on this theme; its basic structure begins with inquiry, leads to perplexity, and ends with enlightenment.

5. Ask students to write reflective responses to the course content and to consider their learning processes in private journals.

Improving students' metacognitive abilities is crucial to improving their thinking; reflecting on one's learning processes is crucial to becoming a better learner. Students can move toward both goals by writing in private journals. For example, one can grade journals holistically on the criteria of thoroughness and responsiveness to the instructor's questions.

6. Conduct opinion polls/surveys as pre-reading activities before assigned readings to arouse interest in issues or topics.

Like everyone else, students have opinions on any issue, whether or not they are well-informed. To generate interest in assigned readings, an instructor can conduct a survey of students' opinions on the issue or test their prior knowledge of the facts presented in the readings. Another pre-reading strategy is to mix data from the assigned readings with wrong data that the instructor invents and then ask students which facts are true and which are false.

7. Present activities that require considering opposing views.

In asynchronous discussions or as formal or informal assignments, ask students to consider opposing views, methods, data, principles, concepts, definitions, interpretations, and conclusions. Dialectical thinking (sometimes called dialogical thinking) is one of the best ways to engage students' minds and personalities, challenge their previously held beliefs, promote openmindedness, defer the rush to judgment, and move them to higher intellectual stages. Adopting a position and explaining why it is better than the alternative requires knowledge, reasoned judgment, and intellectual criteria.

8. Assign a mediatory argument promoting a resolution acceptable to both sides.

This strategy comes from *The Aims of Argument* by Timothy W. Crusius and Carolyn E. Channell. The purpose of the argument to mediate or negotiate is to seek consensus within an audience polarized by differences in a context where there is a need to cooperate and to preserve good relations. The mediatory argument uses reasons and evidence to persuade opposing sides to resolve an issue in a way that satisfies both sides, an approach that can extend students' thinking beyond their simply supporting one side of a dichotomy.

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Further examples and resources are available at http://academic.pg.md.us/~wpeirce/MCCCTR/ttol.html