Teaching Critical Thinking through Online Discussions

Faculty can play a key role in fostering critical thinking among students using Web communication tools

by **Carol B. MacKnight**

The amount of information we receive daily through newspapers, radio, television, and the Internet is increasing at an unimaginable rate. The problems and possibilities that this imposes on our knowledge and understanding are also increasing.

Having information so readily available brings with it the expectation that each of us can and will increase our knowledge base. To build on what we already know, however, requires critical thinking. Otherwise, we may fall prey to modern communication media, which present a world where the prepackaging of intellectual positions and views is so ingenious that thinking seems unnecessary.

We want our students to acquire knowledge and exercise reasoned judgment. They must be able to examine logical relationships among statements of data, construct arguments, respect diverse perspectives, view phenomena from different points of view, and have the flexibility to recast their thinking when reason leads them to do so. This, too, requires critical thinking.

Critical thinking is a common objective of various disciplines and a goal that most faculty can aspire to. "Critical thinking," as defined by Michael Scriven and Richard Paul, "is 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."[1] It is a standard of intellectual excellence required for full participation in the social, economic, and political life of our society.

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Online Tools and Collaboration to Support Critical Inquiry

Critical thinking affects all forms of communication—speaking, listening, reading, and writing—and as such can be practiced daily in every interaction. It is not a separate activity from problem solving, creativity, inquiry, or collaborative learning.

With the availability of online discussion and presentation tools, faculty can engage their students in a wide range of activities that can contribute to intellectual growth.[2] For example, students in the distance learning environment of the University of Massachusetts have used the online Café (WebCT's chat) for idea generation and for online help sessions. The bulletin board offers the possibility for coaching discussions to take students' ideas to the next level to deeper, more intellectual, and reflective learning. Through e-mail, faculty communicate with students one-on-one or one-to-many. Presentation tools give students the opportunity to work collaboratively on project planning, peer editing, and research reports. All these tools can give students practice in sharpening their analytical skills.

The concept of collaborative learning in pairs and groups of students with shared goals and values that inform decisions and actions has been practiced in higher education for nearly a decade. According to Gokhale, "Proponents of collaborative learning claim that the active exchange of ideas within small groups not only increases interest among the participants but also promotes critical thinking."[3]

Online communication offers the potential for collaboration as well as increased participation in the learning process, reflection, peer tutoring, moni-

toring of student learning as it is taking place, and extension of the classroom learning. However, online communication puts emphasis on students' comprehension and knowledge of the elements of an argument and thus on how to interact with ideas and each other in a meaningful way. We cannot assume that all students will come with sufficient critical thinking skills to advance an online discussion, nor can we assume that faculty have sufficient skills and practice in monitoring discussions or skills in creating productive communities of online learners. Both may need support and training.

Supporting Critical Thinking Online

Faculty have the responsibility of shaping online discussions and establishing the classroom culture to support them. It is unlikely that students will succeed in substantive, reflective exchanges if they have not learned to carry on similar conversations elsewhere. It may be advisable to start by conducting some off-line activities that will give students a better understanding of the collaborative learning and communication process. What are the characteristics of a well-functioning group? What are the right questions to ask?

Going online, students must have a clear understanding of the goal of the activity and have the necessary social skills to:
- ask the right questions,
- listen to each other,
- take turns and share work,
- help each other learn,
- respect each other's ideas,
- build on each other's ideas,
- construct their own understanding, and
- think in new ways.

Sugar and Bonk say "there is no guarantee that peer collaboration and interaction will trigger critical reflection on one's ideas or enhance interpersonal

understanding," particularly so when there is no process designed to cultivate these skills.[4] Given the diversity of the student body in public institutions, it is insufficient to provide students with the means to communicate and not support them with the skillful and active participation of faculty or facilitators. Students

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need coaching and practice in how to carry on online discussions. Initially, faculty must step in and support disciplined discussions by:
- maintaining a focused discussion,
- keeping the discussion intellectually responsible,
- stimulating the discussion by asking probing questions that hold students accountable for their thinking,
- infusing these questions in the minds of students,
- encouraging full participation, and
- periodically summarizing what has or needs to be done.

In monitoring discussions or group work activity, faculty must engage in a line of questioning that will continue to drive an idea, thus helping students develop and apply critical thinking skills. Online, asynchronous conversations allow for giving and accepting feedback and for greater reflection. It is important, then, for online participants to be aware of the significance of their responses and learn to ask good questions of themselves and of others.

Questions that focus on the fundamentals of thought and reasoning form the baseline of critical thinking. It is the role of the faculty to coach learning and problem solving by modeling questioning techniques that enhance social interaction and dialogue.[5] Given sufficient practice, students will incorporate more of the questioning techniques and become capable of peer mentoring in carrying on substantive, online discussions.

Asking the Right Questions

In any discipline, the level of questions asked influences the depth of thinking that occurs. For example, if students are asked to name the closest planet to the earth, the response will most likely be a memorized fact. Thought-provoking questions require that students go beyond facts and use knowledge (recognizing assumptions, implications, and consequences) in the exercise of judgment. Critical thinking questions tend to generate more questions in both the questioner and responder, engaging students in thinking in the discipline they are studying.

A process needs to be designed that cultivates these skills with faculty taking the responsibility for modeling thinking and then at some point letting students accept more of the responsibility. It starts with a "focus question" or dialogue such as, "How do good readers read?" "What are the activities involved?" "What are the levels of reading?" "How would you approach different types of reading matter?" It continues with faculty raising questions that drive thinking, asking for clarification or elaboration. In a problem-solving example, faculty might ask students questions that build on issues of support, reasons, evidence, assumptions, implications, and consequences related to the "focus question." Table 1 suggests questions for exploring ideas and statements in depth.[6] Faculty and students can use these kinds of questions as a guide in

Table 1:
Socratic Questioning Prompts

Questions for Clarification
- What do you mean by _____?
- What is your main point?
- How does _____ relate to _____?
- Could you put it another way?
- What do you think is the main issue here?
- Let me see if I understand you: do you mean _____ or _____?
- Jane, could you summarize in your own words what Richard has said?
- Richard, is that what you meant?
- Could you give me an example?
- Would this be an example: _____?
- Could you explain that further?

Questions about the Initial Question or Issue
- How can we find out?
- What does this question assume?
- Would _____ put the question differently?
- Can we break this question down at all?
- Does this question lead to other questions or issues?

Questions that Probe Assumptions
- What are you assuming?
- What could we assume instead?
- You seem to be assuming _____. Do I understand you correctly?
- How would you justify taking this for granted?
- Is this always the case? Why do you think the assumption holds here?

Questions that Probe Reasons and Evidence
- What would be an example?
- Could you explain your reasons to us?
- Are those reasons adequate?
- Do you have any evidence for that?
- How could we find out if that is true?

Questions that Probe Origin or Source Questions
- Where did you get this idea?
- Have you been influenced by media?
- What caused you to feel this way?

Questions that Probe Implications and Consequences
- What are you implying by that?
- What effect would that have?
- What is an alternative?
- If this is the case, then what else must be true?

Questions about Viewpoints or Perspectives
- How would other groups of people respond? Why?
- How could you answer the objection that ___ would make?
- Can anyone see this another way?
- What would someone who disagrees say?

Selected questions from a list compiled by Richard Paul, in *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World* (Rohnert Park, CA: Center for Critical Thinking and Moral Critique, 1990). Used with permission.

examining the quality of thinking in response to "focus questions."

In her research on using questioning to teach critical thinking, King found that when students are given exemplar questions and coaching their learning is "markedly enhanced."[7] In addition, the approach can serve students' own needs to share ideas and to recognize mistakes, misunderstandings, and confusion as a strength, not as a failure.[8]

Discussion Formats

There are a number of collaborative activities that students can participate in online where critical thinking can be practiced. The discussion on reading above could well have taken place in an online expanded group format (seminar group) where the "focus question" is discussed with peers and instructors. Some other discussion formats that help promote critical thinking and task analysis include:

- Small group discussions led by an instructor or group leader
- Buzz groups consisting of two people who discuss issues or problems for a short period
- Case discussions using real or simulated complex problems to be analyzed in detail and a solution or decision offered
- Debating teams where students improve their critical thinking skills by formulating ideas, defending their positions, and countering the opposition's reasoning or conclusions
- Jigsaw groups where members break into subgroups to discuss various parts of a topic and then are responsible for presenting or teaching the information to the other members
- Mock trials where students assume the various roles of individuals in a real trial setting

These online collaborative formats have the potential for increased student interaction, debate, and reflection; close

monitoring of students' critical thinking skills; and time-and-space-independent extension of the classroom learning.

Conclusion

Unless the pedagogical role of faculty includes modeling, coaching, questioning, reflection, and task structuring, it will be difficult for online discussions to escape the superficiality of classroom talk. In the didactic approach to teaching, faculty have not had to be concerned with designing structures to engage students in critical thinking exercises or to hold them responsible for their way of thinking. The question is whether faculty can change their teaching strategies to use online communication tools effectively to help every member in the class go beyond being exposed to content to the point of critically interacting with it.

Teaching critical thinking through online discussion is an important strategy in advancing teaching and learning in electronic forums. Students need to develop and apply critical thinking skills to their studies, to the complex problems they will face in the future in order to compete and survive, and to "the critical choices they will be forced to make as a result of the information explosion and other rapid technological changes."[9] e

Endnotes:

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7. A. King, "Designing the instructional process to enhance critical thinking across the curriculum: Inquiring minds really do want to know: Using questioning to teach critical thinking," *Teaching of Psychology*, 22(1), 13.
8. R. Paul, *How to Teach through Socratic Questioning* (Santa Rosa, CA: Foundation for Critical Thinking, 1996).
9. H. Oliver and R. Utermohlen, "An Innovative Teaching Strategy: Using Critical Thinking to Give Students a Guide to the Future." ERIC Document Reproduction Service No 389702, 1995.

Carol B. MacKnight (cmacknight@oit.umass.edu) is an instructional technologist in the Office of Information Technologies at the University of Massachusetts and is the founder and editor of the Journal of Computing in Higher Education.