Critical Thinking and Asynchronous Discussion

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Abstract

Among the claims made for online learning is its potential to foster critical thinking, particularly by engaging students in asynchronous discussions conducted in writing. This paper reviews and critiques these claims. It first examines the uses of writing and classroom discussion in modeling and encouraging critical thinking. It then reviews some of the arguments for the possible advantages of online interaction over face-to-face discussion. Finally, it critiques these claims by comparing the specific features, which distinguish the experience of participation in asynchronous written discussions from synchronous oral discussion. This comparison illuminates the role of oral discussion in modeling and developing students' critical thinking skills and points out difficulty of doing so through asynchronous computer-mediated discussions.

Introduction

The growing use of computer-mediated distance education in higher education has been supported by an apparent convergence of recent trends in both technology and pedagogy. Networked virtual classrooms appear to offer ways of decentering instruction and empowering students to construct knowledge more independently. One of the distinguishing features of online instruction which seems to many educators to promise these benefits is the capability of engaging students in asynchronous discussions of course material. Such discussions differ from "face-to-face" classroom conversations in two important ways: first, students do not participate in these discussions together at the same time (or in the same place), but post comments and responses at their convenience; second, asynchronous "conversations" are conducted in writing. Many teachers and researchers have argued that asynchronous discussion may in fact be superior to synchronous, face-to-face discussion in its potential for encouraging and developing of critical thinking skills in students (Cooper & Selfe, 1990; Duin & Hansen, 1994; Eastmond, 1995; Harasim, 1989, 1990; Kearsley, Lynch & Wizer, 1995; Laurillard, 1993; Newman, Johnson, Cochrane, & Webb, 1996). In the following paper, I will review and assess some of these claims. My critiques are based on a comparison of the cognitive dimensions of oral and written interaction, and on my own experiences with both formats as both a student and teacher in university courses where the development of critical thinking skills was an important goal. I hope to demonstrate that while asynchronous discussion allows students who are spread across different geographic areas, time zones, and personal schedules, to "attend" class on their own schedules: for an hour after tucking in the kids or before leaving for work in the morning (or even at work), while traveling or vacationing. Soldiers deployed on three-week training missions deep in Mojave Desert can dial up their MBA classes with a laptop and a satellite connection. Students participating in asynchronous discussions can prepare for class when it is convenient and contribute to a discussion when they are ready. Presented over the Internet—a predominantly commercial environment—to an
older, busier, more self-motivated student, online education is easily packaged and sold as a consumer product whose price, efficiency, and convenience make it competitive, a virtue in the eyes of today's increasingly market-oriented educational administrations.

Online education offers students, first and foremost, access. Its defenders are fond of comparing the experience of online instruction to the typical university experience of sitting 50 rows above a professor in a large lecture hall two hours a week, with little or no opportunity for interaction between student and teacher. Though valid, this comparison is a bit unfair, since online proponents also tend to argue, circularly, that online courses work best when classes are kept small, because interaction is fundamental to its model of pedagogy. In at least one respect, however, the comparison suggests an important motive driving the growth of online instruction: distance education promises (though it generally can't deliver them yet) institutional economies comparable to the economies of scale which make large lectures more cost-effective than seminars at large public universities. In the future, many students for whom the cozy seminars of a private school are unaffordable may find their alternatives to be either the large university lecture hall or a smaller, more interactive online class.

The Internet does allow for synchronous communication via chat rooms, MUDs (multi-user domains), and even (with the proper equipment) videoconferencing and such interactions can offer certain students certain advantages not available in most traditional face-to-face situations. Students may, for example, be able to interact with people-instructors, experts, and other students—which physical distance might otherwise keep them from encountering. Also, the absence (except in videoconferencing) of the visual and spatial dimensions of communication, and the fact that it is generally typed rather than spoken, can create a sense of personal distance, even anonymity, between discussants which may encourage them to "say" things—for better or worse—which they might be inhibited from expressing face-to-face. Generally, though, such synchronous interactions retain most of the advantages and disadvantages (to be discussed further below) of spontaneous conversation, though encumbered to varying degrees by the intervening machinery.

Much more than the abilities to communicate across distance and more anonymously, though, it is the possibility of doing so asynchronously which makes online education a practical alternative to traditional educational formats for certain students and, in the view of some educators, promises to create what Harasim (1989) has called "a new domain" in the structuring of learning environments. It is asynchronicity which seems to make the online model not only a more convenient way for many people to access an education, but a mode of learning in some respects superior to classroom models. This capability represents a fortuitous convergence of technology and contemporary pedagogic theory. Just as today's educators work to decenter their classrooms, to encourage learners to construct their own meaningful knowledge structures, and to allow opportunities for critical dialog, the advent of the Internet and of relatively affordable personal computers has created the opportunity to recreate the classroom as a network of self-motivated individuals working in their own physical space, who do not go to class but rather invite the class to attend them.

Potential Advantages of Asynchronous Discussion

Advocates of online instruction argue that online discussion, and particularly asynchronous discussion, offers certain pedagogical advantages over even the face-to-face seminar. They generally point to at least three important ways in which such discussion improves the quality of class in-
teraction in ways, which seem likely to en-
courage critical thinking. First of all, because
dress, appearance, demeanor, and even gen-
der and ethnicity are less apparent online,
various social inhibitions that might discour-
age some students from participating in
face-to-face discussions are diminished. Stu-
dents are represented only by their written
words, and these abstracted personalities
may feel less inhibited from entering into the
abstracted fray of such discussions. This
seemingly common-sense point is made in
much of the literature cited above, though
some researchers have also pointed out po-
tentially inhibiting aspects of the online dis-
cussion experience (Feenburg, 1989;
Hasarim, 1990). I have employed asynchro-
nous discussion in classes which also met
face-to-face and have noted that some stu-
dents who were unwilling to participate in
the classroom seemed much more comfort-
able articulating and exchanging their ideas
in written submissions to the online conver-
sation.

Of course, anonymity can also lead
online personalities to cross certain lines of
decorum as well, but online classrooms can
also foster feelings of community which cre-
ate social pressure to behave appropriately
which may not exist in other online settings.
Also, dealing with rude or unobliging stu-
dents can be simpler online than when they
are sitting in the same room: offenders can
be easily and safely ignored by other stu-
dents and privately counseled by the in-
structor. Currently, students who take col-
lege courses online tend to be older and
more self-motivated, and thus less prone to
such behavior in the first place.

A second, related advantage to online
discussions, from a teacher’s point of view,
is that it not only encourages students to
participate, it makes it practical for the
teacher to require their participation. Since
that participation is submitted in writing, it
can be monitored. Students cannot lurk si-
lently in the back of the room, for the only
way for a student to be “present” is by par-
ticipating.

Perhaps the online advantage most fre-
quently and emphatically heralded is that,
because students discuss in writing, their
contributions tend to be more thoughtful
than those of students asked to respond on
the spur of the moment, and under certain
degrees of social peer pressure, in a face-to-
face discussion. Students discussing asyn-
chronously have the opportunity to reflect
on the discussion and on their own re-
sponses to it. They can wait until their
thoughts are formed—perhaps days after a
question has been posed—before submitting
them to the group. Then they can avail
themselves of the precision and structural
devices of writing to formulate their
thoughts completely, with clarity, complex-
ity, and nuance. According to Kaye (1989),
for example, student contributions to asyn-
chronous discussions “are often more
thoughtfully composed because of the text-
based nature of the medium”; he finds the
medium therefore particularly appropriate
for teaching in disciplines which try to en-
courage students to learn through “discus-
sion and debate” (p. 11). Harasim (1990)
makes a similar claim, arguing that the
“need to verbalize all aspects of interaction
within the text-based environment can en-
hance such metacognitive skills as self-re-
flection and revision in learning” (p. 49), as
do Cooper and Selfe (1990) in their study of
computer conferencing in literature classes.

Some researchers have attempted to
identify and quantify specific differences
between the structure and content of criti-
cal thinking which takes place in face-to-face
settings and that which occurs in asynchro-
nous online discussions. Harasim (1989) for
example, cites studies suggesting higher
rates of interaction between students in
online discussions than in face-to-face situa-
tions. As noted above, the online environ-
ment may not only encourage such higher
rates of involvement, it can actually allow
the instructor to enforce them (as well as
monitor and record them). Newman et al.
(1996) have tried to analyze the content of online discussions for "depth of critical thinking" in five distinct categories or stages of the critical thinking process. Their findings, though qualified by the small sample of student work studied and perhaps overly quantitative for some tastes, are nevertheless intriguingly mixed. Generally, they concluded that "the computer conference discussions showed a significantly deeper overall critical thinking ratio than the face-to-face seminars" (conclude.html). However, for certain cognitive categories asynchronous discussion seemed to offer fewer advantages; specifically, in "the stage where most creativity is required, including the generation of new ideas" (conclude.html) within the group, oral face-to-face discussion in some cases appeared to be more productive than asynchronous, written discussion. Interestingly, the authors speculate that this phenomenon may have something to do with the written medium in which the online discussions took place, the result of "the self-censorship of new ideas before committing finger to keyboard, or less spontaneity at the slower pace of asynchronous computer conferencing" (conclude.html).

Though conducted in writing, electronic textual expression is also different in some important ways from expression in print (i.e., "hard copy"), in some respects exhibiting features more characteristic of oral rather than written discourse (Ong [1982] has argued that electronic media in general have created a resurgence of orality in contemporary culture, what he calls "secondary orality"). The electronic text itself is more ephemeral than ink and paper; hypertext environments tend to encourage restless movement between texts rather than the concentrated reading made habitual by the stable material condition of print texts; and online and e-mail style tends to be informal and conversational, due both to its easy interactivity and to its evolution within the bullet-point rhetorical environment of the office. But compared with the off-the-cuff or reluctantly extracted comments—or dazzled or dumfounded silence—of many classroom discussions, online contributions certainly allow for more, and more thoughtfully composed, responses. In most of the literature on the question, this is taken as evidence that online asynchronous discussion encourages and enhances critical thinking. As I will argue below, however, the fact that such discussions take place in writing also distorts their ability to reflect and model the processes of critical thinking which students experience by participating in—and perhaps even by simply observing— synchronous face-to-face discussion in a classroom.

**Modeling the Processes of Critical Thinking**

I have both taught and taken college-level courses in both formats. In both the courses I teach (writing, literature and humanities) and most of those I have taken (undergraduate and graduate courses in liberal arts offered the old-fashioned way, and courses in pedagogy online) seminar-style discussion of course issues and material has been the central activity of the class. Despite the arguable benefits of online discussions noted above, I have nevertheless always felt the experience to be somehow unsatisfying. A part of my reaction is no doubt simply a response to the unfamiliar, analogous to the objection made against electronic books: that curling up in bed with a computer just is not the same. Certainly, however, such reactions are doomed to become anachronistic as the technology becomes ever more user-friendly (can leather-bound laptops be too far distant?) and the culture adapts itself to it (for networked teenagers it is as natural to gossip on the Internet as it once was to do so on the phone). Still, communicating with anonymous classmates or students while sitting alone and silent in front of your terminal (even though you can slurp your soda or listen to Stravinsky during class discussions) has seemed to lack some of the excitement, emotional investment and even
risk of in-person discussion. My reaction motivated me to consider more carefully the role and purpose of discussion in my classes, to try to determine to what degree my intuited reservations was sound or merely self-serving.

This closer examination has led me to conclude that the differences between these two modes of discussion are important, specifically because they alter and undermine the function discussion plays in fostering critical thinking in students. In fact, studying and considering the nature of online discussion more closely has led me to a greater appreciation of the function in-class discussion can play in modeling critical thinking. Perhaps surprisingly, it is precisely the oral, spontaneous, messy and disorderly quality of face-to-face discussion that allows it to play this role more effectively than online discussion can. Though asynchronous discussion may appear to produce more thoughtful student comments, it actually obscures the critical thinking processes which class discussion should model and encourage.

Synchronous, oral face-to-face discussion puts on display for a class to observe thought in the process of being formed. It is a form of more or less enforced brainstorming, a method of approaching a problem which writing teachers have encouraged to get students started, to overcome writer’s block, and, most importantly, to generate new ideas. In a typical brainstorming exercise, writing teachers ask students to write down these almost unformed thoughts so that by objectifying them (literally making them into an object—ink on paper) they can better assess their strengths and weaknesses. This is an important and difficult skill for student writers to develop, since their writing will generally be done alone. A class discussion can be a collaborative version of brainstorming, in which ideas are objectified—more ephemerally but more publicly—as speech. The immediate responses to prompts that compose an oral discussion are useful to the critical thinking process in the same ways that brainstorming ideas are useful to the development of a written argument. Their value is in their very unshapenness. They are likely, certainly, to have all the weaknesses of a first thought: they may rely more on emotion, prejudice, and will more often be simply wrong. But they prompt the process of critical reflection, being its raw material; and, like written forms of brainstorming, they often lead in unexpected and creative directions. Oral discussion thus embodies and models the process of offering and then testing ideas which is the heart of the critical thinking process. If the point of discussion is to model for students the process of critical thinking, it may not be vital to that purpose to have every student participate in responding to every question. All that is necessary to model critical thinking is a sufficient number of participants willing to offer ideas and respond to and evaluate those of others.

With this goal in mind, the very thoughtfulness of online contributions becomes a liability: they only show the finished product, not the messier process that should lead to it. Harasim (1990) suggests that participation in online discussions may in fact offer a student “the opportunity to make explicit to oneself the aspects of an activity that are usually tacit—for example, expressing the thinking processes by which a decision or conclusion is reached, or the strategy for accomplishing some task” (p. 49). In my experience, however, contributions to threaded online discussions tend to represent finished thoughts rather than thought processes. For one thing, they are likely to be longer, more coherent, and more organized than the typical oral comment. They tend to offer reasoned dissertations in defense of a generalization. In contrast, oral responses in class discussions tend to be brief and tentative; they are more likely to express an emotional reaction, an unexamined prejudice, or relate a personal experience. For example, a classroom dis-
A discussion of sexism in the workplace is likely to begin with abrupt or emotional expressions of frustration—either at experiences of sexism or at having to discuss it—or perhaps personal anecdotes offered to illustrate a general feeling on the subject. Ong (1982) notes that in oral cultures, abstract generalizations are uncommon, whereas analyses are generally grounded in the "lifeworld" of the speakers. In other words, members of an oral culture are less likely to answer a question with an abstract principle but by reference to an example, a practical application, or a proverb—itself usually concretizing a general rule in a metaphor or example. As Ong also argues, in our culture even oral communication has been infected by the principles of print, so that we value more highly speech that is modeled on the structures of written language. Still, students' reactions to questions in class are less likely to incorporate the abstractions more typical of print (think of those students whose writing is too abstract, and whom we advise to write more as they speak). However, these emotions, prejudices, and examples are the proper starting point of the process of critical thinking; in fact, they are the habits of mind to which critical thinking addresses as its object and which it tries to refine and correct. Such unedited, unconsidered reactions are valuable in revealing the emotions, prejudices, ignorance, and simplifications that underlie unexamined opinions on issues. A well-managed classroom discussion can demonstrate how to move from these initial reactions to a more thoughtful assessment of an issue. When students are encouraged to consider concrete examples of the issue at hand and to try to apply theoretical explanations to those examples, the complexities of the issue, and perhaps the insufficiencies of generalized theories applied to understanding it, can often be fruitfully revealed. Discussion of a particular example of sexism in the workplace, for example, might reveal the difficulty of trying to generalize simplistically about nature of the experience, the motives and perceptions of the participants, the intersection of this with other issues. As George Orwell has advised the last two generations of undergraduates, to think clearly and honestly it is best to start with concrete images rather than abstract ideas.

A related experience common in in-class discussion but hard to reproduce online is the student who raises an urgent hand, only to find him- or herself tongue-tied or at a loss for just the right words to express his or her important idea. In helping that student test possible ways of wording that thought, the class can engage in another activity otherwise restricted to the solitary act of writing: the use of language itself as a way of experimenting with, shaping, and clarifying ideas. As different ways of expressing the thought are tested, the class gets to assess slightly different variations of the idea or position. The results of such oral group editing include alternative positions and, perhaps, a more nuanced or precisely conceived—because more precisely worded—idea. Such experiments with language can make other important points to students: the role of language in shaping thought, and the possibility and importance of distinguishing between subtle differences of meaning. Again the classroom becomes a vehicle for modeling crucial critical thinking processes which writers—whether online or not—generally must do on their own.

As noted above, another advantage claimed for online discussion is the ability to encourage or even require participation. Because online contributions are submitted in writing, it becomes practical to monitor and assess participation much more rigorously than in an oral situation. This may seem to encourage critical thinking by making it a requirement, but having everyone contribute in this way may also inhibit the function of discussion in fostering critical thinking. For one thing, universal participation produces a high degree of redundancy in the responses generated. Whereas
in class a lucky teacher might get two or three different answers to a question, online the teacher will get twenty responses, but many of those responses, unless specifically designed to elicit personal experiences, are likely to be very similar. While students participating in face-to-face discussions are not immune to repeating what their classmates, have already said, it is fairly easy for a teacher to move the discussion beyond it. Online such repetition is almost inevitable, especially if responses are required of all students.

Face-to-face conversational conventions encourage discussants to acknowledge what others have said, and to refer to and to build on what has gone before. Because online discussions are asynchronous, it is possible to do this online; threaded discussions allow teachers to encourage or require that students respond to other students' contributions. In addition to creating redundancy, requiring such participation alters the premise of such conversations fundamentally: rather than a communal effort to arrive at a collective understanding, such conversations become largely ways for each individual student to fulfill a requirement. The individual's participation, rather than the group's learning, becomes the motivation driving the discussion. As a vehicle for advancing a discussion towards a conclusion or set of possible conclusions, which is the ostensible premise of a class discussion and the activity it tries to model, online asynchronous discussion, while it may be more democratic, may be (as democracies often are) less efficient. Moreover, it may model (again, as democracies sometimes may) individual self-interest rather than a sense of communal endeavor as the motivation for participation in the group's work.

This inefficiency leads to other consequences which also detract from the ability of online discussions to model good critical thinking practices. As noted above, inappropriate contributions to an online discussion can be fairly easily ignored (even deleted, if the teacher wants to intervene in that way). More generally, though, it is likely that many, perhaps most, students' contributions to an online discussion will go unanswered. Partly this is due to redundancy: other participants, the instructor included, will not feel the need to repeat a response to each submission which makes similar point (as one might feel the obligation to do in response to similar answers in a set of written exams). Students, however, will have the experience of offering their thoughts and getting no direct response. Feenberg (1989) describes such silent lack of acknowledgment online as "brutal and ambiguous" (p. 34). In class such silence would be almost impossible: social convention would demand that almost any contribution to a discussion at least be acknowledged, and failure to respond sincerely to such a contribution is taken as an affront.

By the same token, participants in online discussions are likely to "listen" less carefully to the others in the conversation due to the quantity and redundancy. In threaded discussions among even relatively small groups, it very quickly becomes a chore to read through all the submissions, especially when so many of them are repetitive (again, teachers' experiences reading paper or exam sets in which students are responding to the same questions an illustrative analogy). This inattention is further encouraged by the conventions of online textuality in general, which tends to discourage careful reading and instead encourage readers to jump restlessly from text to text. Students participating in online discussions are more likely to skim other students' submissions, stopping when they find something that strikes a chord with them. They will tend to cluster their contributions around ideas of interest to them, dismissing or passing over comments that raise issues or ideas to which they do not immediately respond. Thus, discussions tend to be more self-centered and less likely than face-to-face discussions to encourage students to engage new ideas or
points of view.

Finally, the inefficiency of asynchronous discussion makes it more difficult for instructors to try to steer discussions through the process of critical thinking. For one thing, the instructor tends to become just another voice in such conversations, and not the dominant or even authoritative one. Advocates of online education generally applaud this development, suggesting it is more in line with student-centered, constructivist approaches to learning. Questions of authority and expertise aside, however, instructors are not using the full potential of discussion if all they are doing is holding a 50 minute "open-mike" session for airing thoughts on the subject. Their role as "guides" or "facilitators" involves more than just ensuring that students stick to the topic and do not offend one another. If class discussion is to model critical thinking, it needs to move the discussion somewhere, from initial thoughts and reactions towards-if not all the way to-more sophisticated, critical interpretations or understandings, perhaps even conclusions. This does not mean that the instructor pre-ordains the conclusion or even the set of possible contending conclusions. But the instructor does have a responsibility to see that the thinking that goes on in class is not just an activity but a process, which has as its goal some product. In discussing the management of online conferences, Feenberg (1989) notes the importance of a moderator who can provide what he calls "meta-comments" which "weave" the otherwise disorganized strands of the conversation together; he comments, however, that too often online discussion leaders do not have "the time or talent" to perform this task (pp. 34-35). This can be a difficult enough skill to master in the face-to-face classroom: the inefficiency of asynchronous class discussions makes it only more difficult.

I have not seen an online model of discussion that allows this to occur. In fact, the most common form of online discussion used in classes, the threaded discussion, in many ways does just the opposite. Typically, in such discussions, the instructor will offer a question or questions for students to respond to. These responses are cataloged as a list, usually of links, which connect the reader to each full response. The links to the responses or comments of other students to these initial answers get listed "under" them. Thus the discussion is represented graphically as a hierarchy of responses, with each initial response at the top and aligned with the left-hand margin, and subsequent responses "below" those initial headings. The traditional outline form implies that the first response is privileged, with subsequent entries subordinated to it. In fact, any model of the process of critical thinking ought to suggest the opposite: that subsequent entries generally lead to improved versions of the original idea. These hierarchical "threads" also suggest that the discussion as a whole has a digressive rather than a synthetic form; responses seem to lead the reader-contributors away from the main "thread," down particularized digressive tracks, rather than linking ideas together. Threaded discussions tend to look more like river deltas, where the main stream gets broken up into smaller and smaller rivulets. Though, as I have suggested above, unexpected and digressive contributions can enrich in-class discussions, as models of the critical thinking process, such discussions should encourage students to work toward synthesis, towards the organization of disparate reactions, thoughts, and points of view into a more clearly defined understanding of-though not necessarily agreement on-the issues being discussed. Again, the digressive shape of online discussions tends towards the isolation of class members from one another rather than their organization in a larger communal learning enterprise.

Conclusion

This last complaint against online disc-
cussion as a model for critical thinking—perhaps the most important one—is one which technological developments and pedagogical revisions might be able to address. One can imagine other ways of graphically representing discussions—some sort of pyramidal or other three-dimensional structure perhaps—which might better portray collaboration, links between related ideas, and a process moving towards a goal. Similarly, as teachers become more experienced in online instruction, they are likely to develop strategies for answering this and other concerns presented here.

Thus, the foregoing discussion is intended as a critique of the present state of online education and of a particular set of claims made for it, not as a criticism of it as a learning genre. The technology is young and its application to education barely in its infancy. As is typical with such innovations, fear and optimism both tend to be exaggerated in the absence of a sound body of data or experience. But those who advocate the technology simply as a way to offer access to potential learners who might otherwise not be served are being too modest: online instruction is not just a different way to deliver traditional instruction—it is a technology which makes new forms of instruction possible. But only as the technology and the culture evolve together will it become clearer what those forms might be. The example of earlier pedagogic technologies may be instructive. When writing began to infiltrate the agora, Socrates objected, arguing that it threatened to weaken rather than enhance education and the mind. Twenty-five hundred years later—and over 500 years after the printing press made the written word widely accessible—we live, in Jay David Bolter's words, in "the late age of print," about to pass from the age that superseded Plato's into a new networked and digitized world. Yet, for all the ways the printed word has shaped our world—and especially the ways we learn about our world—the instructional norm remains fundamentally an oral one: students and teachers sitting together in a room and talking. The printed word transformed education not by replacing or improving on oral communication, but by doing new things that oral communication could not: storing and organizing complex structures of information, and distributing it over time and distance. Computers may transform education in fundamental ways, but only when we discover what they allow us to do that we could not do before.

References


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