



Student Collaboration Online in A Critical Thinking Course

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Abstract: This article identifies several benefits of student online collaboration and describes a number of collaborative tools that can be used without charge. The author also shares with readers several different strategies for promoting collaboration, including some of his personal tips and suggestions, based on his experience of teaching an online course on Critical Thinking at UMass Boston. The author argues that online education offers many opportunities for students to learn a variety of subjects, think critically and work collaboratively. However, for online faculty to be effective in their teaching they need training and experience.

INTRODUCTION

This article identifies several benefits of student online collaboration and describes a number of collaborative tools that can be used without charge. The author also shares with readers several different strategies for promoting collaboration, including some of his personal tips and suggestions, based on his experience of teaching an online course on Critical Thinking at UMass Boston.

I. COLLABORATION AND ITS BENEFITS

A simple definition of collaboration is—working together to produce a common goal. *The American Heritage Dictio-*

nary defines collaboration as “To work together, esp. in a joint intellectual effort” (p. 291). Online education can be greatly enhanced with collaborative activities where students actually communicate with each other and work together online.

There are numerous benefits to having students engage in collaboration. Collaboration creates a sense of belonging to an online community, promotes communication, encourages critical thinking and cooperation among students, and reduces or eliminates isolation.

Taking an online class can be a lonely and isolating experience. However, once collaboration is introduced, students communicate with each other, work together to complete assignments and engage in critical thinking by making decisions, checking for assumptions and identi-

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fyng their own points of view, while being exposed to other points of view or perspectives.

Eastern Michigan University has identified several benefits to collaboration. On their website¹ it states the following:

- Collaboration ensures a more effective use of individual talent
- A second and closely related benefit is the transfer of knowledge or skills
- Collaboration may be a source of stimulation and creativity
- Collaboration provides intellectual companionship
- Collaboration extends the individual researcher's networks
- Collaboration enhances dissemination of projects
(Loan-Clarke & Preston, 2002)

The Rochester Institute of Technology's website² reports that online collaboration:

- Promotes critical thinking skills.
- Promotes creative thinking through social stimulation and sharing of ideas.
- Requires active student involvement in the learning process. Students increase preparation and practice working with one another.
- Provides a social support system for students.
- Builds diversity understanding among students
- Develops team skills used on the job and beyond.

Why use collaboration? Brian Goff, a RIT student, best answers this question as follows:

¹ http://www.rcr.emich.edu/module9/i4_benefits.html

² http://online.rit.edu/faculty/teaching_strategies/collaborative_learning/benefits.cfm

In the working world, many employers do expect their employees to solve problems in teams. It only makes sense that multiple minds are better than one. Therefore, I believe instructors who have their students work in teams better prepare them for the working world.³

II. COLLABORATIVE TOOLS

Having noted some of the numerous benefits for online student collaboration, I describe in this section various collaborative tools that they can use.

A. *Google and Its Features*

Google, the search engine offers a lot more than just searching. Once you have an email account with Google (called Gmail), there are many features that you will be able to access. (If you don't have a Gmail account, just go to www.Gmail.com and click on the button that says "Create an Account." Complete the online application and you will have full access.

Google Phone – using this software enables you to call anywhere in the US for free.

Gmail – email and the ability to send Instant Messages, also known as "texting."

Google Documents – including a spreadsheet, presentation software and the most practical software – a word processing program. This allows students to work asynchronously. By having students color code what they are writing, the instructor can easily see who did what or who wrote what.

To avoid any problems with links or attachments, I require students to copy and paste their Google document and email it

³ http://online.rit.edu/faculty/teaching_strategies/collaborative_learning/benefits.cfm

to me using Gmail. This results in elimination of any compatibility issues or glitches with various operating systems.

B. Skype

Skype.com offers real live phone communication from computer to computer. Unlike Google phone, you can call anyone anywhere in the world. However, the person you call must have his or her computer on and the Skype software running. To download Skype go to www.skype.com, which is free.

In addition to phone communication, Skype also offers video conferencing, ability to send and receive files, a White Board and Instant Messaging. In addition, Skype now offers the ability to record your phone session. The ability to see who you are talking with opens the door to all sorts of collaboration. Once in Skype, go to "Features" and view a demonstration of the collaborative video which begins with someone playing a piano. The use of video greatly expands the ability to collaborate online.

C. Facebook

Facebook.com is an extremely popular website which features social networking. Many students are using Facebook and are quite skilled in using it. Facebook could be used in a variety of ways. First, each student can create a profile (bio-sketch). Second, Facebook allows users to create groups. The entire class could be a group in itself on Facebook enabling emails, files and profiles to be exchanged, but only to members of the class (group). Facebook also offers chat, which can also be used for collaboration.

Since many students are already using this program, why not have them use it for academic purposes? The ability to chat, exchange email and create groups are all features that enable students to collaborate

online using software that is familiar to them. In many instances, some students may know of other features that could be used for collaborating as many students are intimately familiar with various features of the software.

D. Blackboard

Many college and universities use some form of the Learning Management System known as Blackboard. This software has a number of features that can be used for collaboration.

Who's Online – This feature allows users to see who is online and enables them to text each other or send an instant email. However, there is a caveat here. In order for the person to receive an instant message, that individual must have enabled "pop ups." If they haven't turned on that setting they will not be able to see any instant messages.

Chat – Blackboard has a chat room that can be used for collaboration. Students can discuss an assignment of project and save a transcript of the session that can later be view by their instructor. A chat room offers live *texting* ability and works similar to texting capability on a cell phone, except everyone who is in the chat room can read the message.

Folders – Within the Discussion Board or Blog session, an instructor can create folders that can be used collaboratively among teams of students. A folder could be created for each team and students on a particular team could place files or documents in perspective folders and work on it asynchronously.

Wimba – This is a separate program within Blackboard that offers live voice communication, a whiteboard and much more. It is similar to Skype and essentially allows for the teleconferencing and much more. An instructor could address the entire class online. Wimba offers free online "webinars" and other informative

programs. UMass Boston also has a training program for faculty who wish to use this technology.

E. Wikis

A wiki is a collaborative website. One of the most well known wikis is Wikipedia.com. There are many free wikis available on the Web and all one needs to do is search for “free wikis” using Google or some other search engine. Most wikis come with standard features such as the ability to create and edit pages and allow certain privileges to students. Wikis are generally much easier to build and learn how to use, and require no knowledge of coding. One disadvantage is that most free wikis have little or no tech support other than email.

UMass Boston has a wiki available for each faculty member who desires one. All work that students do on a wiki is asynchronous. My students found the wiki much more easier to use than a Learning Management System, such as Blackboard. Wikis can include various types of pages, including lessons, collaborative page and, archives. There is a Discussion Page which works similar to a Blog or Discussion Board. Wikis do not have a gradebook or live chat capabilities. However, one could use Skype for live voice communication and attach a spreadsheet for grades. Wikis can include audio and video links as well as links to other websites. Files can also be uploaded from your computer. Wikis offer students the opportunity to do all sorts of collaborative work asynchronously.

III. INCORPORATING COLLABORATION INTO YOUR COURSE

A. Blog or Discussion Board

This is an easy way to introduce some collaboration into your classes, especially if

you already are having your students use a blog or discussion board. Anywhere from 2-4 students can work together on a team. Their primary responsibility is to respond to other student posts. The team members collaborate among themselves and decide who is going to cover what post. If there are four students on the team, not all four students need to respond to the same post, but all posts need to be covered. I usually provide a question or comment as a topic for the blog or discussion board. However, if you wish you can also have your students do that collaboratively. Every student in my course eventually works on a team and runs the discussion board. Part of their responsibility is to encourage further discussion. You can either let them choose what date they will run the discussion or assign them a specific date. If you find that students are not choosing a date or a team, you can assign both.

In my course, all students are required to post at least once a week. While I do not accept late postings, I do give extra credit for extra postings and encourage students to post more than once a week. I also respond to certain postings especially if the posting is exceptionally good or raises an important issue.

B. Making a Regular Assignment Collaborative

Practically any regular assignment can be adapted into a collaborative assignment. An essay based on a question or given topic could be done collaboratively using either a collaborative page in a wiki or Google documents. Usually it's best if students work in teams of two. One student might write something and post it on a collaborative page. The other student could post her writing on that collaborative page, but color code it so that it would be clear who wrote what. The first student looks over the copy and makes some comments or the second student could make some

comments initially. It doesn't matter in what order this is done. They would keep making revisions and comments until they finish the assignment. This is one way of working collaboratively.

If two students wanted to talk with each other in real time, they could use Skype and actually look at the document while speaking to each other on the phone (via Skype). The same assignment could even be done using just email, or a combination of email and instant messaging.

Students will find which method of collaboration works best for them and it may vary depending upon the assignment and who their partner is. In my class, they have a weekly collaborative assignment. But I also have them work on a long-term collaborative project that usually lasts about half of the semester.

Collaborative Project – This is a long-term assignment for teams of two students whom I assign work on a specific project. Examples of projects include: a mini-lesson plan for teachers or a mini-training program for a business or organization. In either case it must be strongly related to the course. You as the instructor determine the criteria for the project and post those criteria in advance. Because this is a long-term project, I usually have them complete it in phases. Phase one might be to decide whether they will be designing a lesson plan or training session. During this phase they identify their audience as well as three specific skills they will present.

Phase two might consist of the actual design, what they would be doing and how they will do it. Phase Three would include some type of evaluation tool, such as a survey or pre and post-test, etc. Each phase has a specific objective and deadline and the instructor can view their progress by looking at the collaborative page or folder.

Study Session – Many courses such as science and foreign language courses are packed with lots of information and require students to study the material. Instead of

studying alone, students could study collaboratively. Each student could find a buddy or be assigned one and student can collaborate either synchronously (using such tools as Skype, Google phone, Wimba or chat), or asynchronously, using email, collaborative pages/folders.

Chapter Reviews – Many textbooks have chapter reviews and often this is assigned as homework. These chapter reviews, usually consisting of questions, could be worked on collaboratively. As long as students color-code their answers, it is easy to see who is doing what.

Create a Quiz – Having students create a quiz collaboratively is a wonderful activity that can have many purposes. Each student could create three to six questions. Then they can compare their questions and decide upon three questions each. After deciding upon the questions, each student will take three questions and create four multiple-choice answers. Such an activity helps students learn the material, work collaboratively and help them prepare for a real quiz, exam or even an essay of paper to write. For further collaborative activities, other teams could take each other's quizzes. There are numerous possibilities with this activity.

Use of Video – Using video technology opens the door to all kinds of possibilities for collaboration, which could be done either asynchronously or synchronously. Videos could be used for a variety of collaborative assignments ranging from study sessions to working on regular collaborative assignments of collaborative projects. If you like to have students do live presentations in a face-to-face class, they could prepare a video presentation and have it evaluated or critiqued by their peers. The instructor would set the criteria and use either a rubric or simply list what the evaluation criteria is for evaluation. There are many other possible uses of video for collaboration. Be creative and explore some of them!

C. Solutions to Common Problems

As an online instructor using collaboration, you will probably experience some of the following situations.

- A student cannot find a partner for the weekly collaboration.

Solution – Have the student send a general email to everyone in the class telling them that they need a partner for this week. Also have the student include a “cc” in their email so students will know that you are aware of the problem. This usually results in several students offering to work with the student who lacks a partner.

- A collaboration partner is not responding to their partner’s emails.
Solution #1: Have the student send one more email and with a “cc” in their email.

Solution #2: The Instructor emails the non-responsive student inquiring if there is a problem and requesting an immediate response.

Solution #3: The Instructor calls the students. (Note: only twice in 7 years of teaching online have I ever had to do this).

- A student complains to you that their partner is not doing their fair share or isn’t doing any work at all.
Solution – Inform the student that he/she should continue working on the assignment and that if necessary you will issue separate grades for the assignment. Also inform the student that you will contact the non-responding student. (Note: with color-coding, it is quite easy to see who is doing what).

- A collaborative team of students is really going astray and is not following the guidelines.

Solution – Schedule an online meeting with them and save yourself lots of time writing and responding to emails.

CONCLUSION IV. TEACHING CRITICAL THINKING ONLINE: COLLABORATIVE ASSIGNMENTS AND METHODOLOGY

Having discussed the various collaborative tools available and how to incorporate them into your courses, I will now describe some of the assignments I require my students and the methodology I use when teaching a Critical Thinking course at UMass Boston.

The first collaborative assignments I assign to my students is to create a definition of critical thinking. For this assignment students choose their own partner and preferred collaborative tool. Initially, they might contact each other by email and decide whether to work synchronously or asynchronously. Each student creates his or her own list of two or three definitions that they research on the Web. Then they compare lists. This is where some critical thinking is applied. Students engage in “dialectical thinking” (thinking that involves more than one perspective) (Paul pg 546) and decide upon a definition after synthesizing their existing definitions. The decision-making process can include several critical thinking skills. However, since this is their first assignment, the emphasis is more on collaboration than on critical thinking. Subsequent assignments do focus more on a variety of critical thinking skills and will be discussed a bit later.

It is important to understand the nature of the technology being used to facilitate this assignment. In a regular face-

to-face class, students might be working in partners or in small group. With an online class, this same assignment is facilitated using various types of collaborative tools discussed earlier. Students might choose to use Google documents or a Wiki. If they wanted to work in real time (synchronously), they might choose to use Skype or Wimba or even Instant Messaging. The actual assignment is completed over a period of one week and usually requires a few or several communications between the two students depending upon what method of collaboration they are using. I do not require any one specific collaborative tool. Rather, I let the students choose what works best for them. There are a number of factors that must be taken into consideration: individual schedules, familiarity and proficiency with a specific collaborative tool and possibly different time zones.

What happens when two students can't agree on one definition? Usually they can combine two definitions into one. They can also include their individual definition in addition to their collaborative one. For practical guidance, I tell my students that if someone were to ask them, "what is critical thinking?" their definition should answer that question. As a practical matter, the definition shouldn't be too long. There are some critical thinking definitions on the Web that fill a half page of single-space typed text. Their definition needs to be fairly brief. This later requirement requires additional synthesis and more collaborating—working together to reach a common goal.

As the semester progresses, the assignments become more complex and require more critical thinking. One assignment, "The Move" is a good example. In this assignment, the students are given a report about an electronics shop that repairs small appliances that wants to move from the city to the suburbs. The report is loaded with assumptions and frames of references. The students work together to identify the vari-

ous assumptions and frames of reference (viewpoints). They must provide their own recommendations either in favor of or against the move. Since this is a critical thinking class, they are also required to provide reasons for their decision. In addition, they are required to identify some of their own assumptions and frames of reference. This latter requirement is generally what separates graduate work from undergraduate work. On the undergraduate level, it might be sufficient for students to be able to identify assumptions and frames of references written in a report. However, on the graduate level, students are required to apply and internalize these skills. They need to be able to identify their own assumptions and frames of reference in relation to the assignment.

To facilitate this, students ask each other such questions as "what are you assuming" or "are you making an assumption"? To help each other identify frames of reference, they might ask each other, "what makes you think that?" or "have you had an experience that is influencing your thinking?" The role that these two critical thinking skills play in everyday decision-making can be profound. These two skills in particular are developed throughout the entire course to the degree that eventually, the students internalize them.

It is important to understand the pedagogy being used. There are several elements involved. First, there is the collaborative tool being used within the medium of an online environment. Second, there is the actual collaborative assignment which is often designed to engage students in critical thinking at various levels. For example, with "The Move" assignment, initially they are identifying assumptions and frames of reference found in the report. However, higher levels of critical thinking take place when they begin to recognize their own assumptions that they are making about this assignment and their own frames of reference. This leads to

another critical thinking skill called metacognition or simply "thinking about one's thinking"—the generally accepted definition within the field of critical thinking. Finally there is the finished assignment where students also provide their own recommendations regarding whether or not this move should take place. As stated earlier, there are several benefits of collaboration that any given assignment might include.

The Class Project

The Class Project is a long-term collaborative assignment that usually lasts about half the semester. For this assignment I select teams of 2-3 students. The goal is to create either a mini lesson plan (for education majors) or a mini training workshop (for non-education majors). To facilitate this assignment I break it down into phases.

During phase one, students contact their team members, decide who will do what, what software they will use and how frequently they will be in contact with each other. During this phase they choose three critical thinking skills and define them. The critical thinking skills can include any skills that are included in the course, even ones that have not been studied yet.

In phase two, students create an outline and develop either a lesson plan or a workshop design. They are required to include at least one interactive activity as part of their lesson or workshop design. They need to describe in detail what they will do and how they will do it.

During phase three, students create some method of evaluating their lesson or workshop design. This can include, but is not limited to pre- and post-tests, a survey, questionnaire, or other methods of evaluation. During this last phase they review their entire Project before submitting it. While the class Project as a whole is done collaboratively, there is one piece that is done individually. Each student is

required to write a brief statement identifying what critical thinking skills they have used to do this assignment and describe their experience working collaboratively. Many students identify several critical thinking skills they have used and further report that they have applied them in their professional lives at work. The common critical thinking skills identified are: frames of reference, identifying and challenging assumptions, metacognition and fairmindedness.

The Project concludes with a peer review. Each team evaluates another teams' work. As instructor, I reserve the right to issue my own grade if I feel that any team has been unfair or harsh in their evaluation. However, oftentimes I find that we are in agreement concerning the evaluation.

Throughout the Project, I periodically check on each team's progress by reviewing their work, which is posted in each team's folder. (I create a page in the Wiki for each team.) The work required for the Project is substantial and often the results are very impressive. I usually publish some of them in the Wiki.

It should be emphasized that the additional requirement of having each student write a brief statement identifying the critical thinking skills they used to do the Project ties everything together and reinforces those critical thinking skills.

V. WHY DO SOME FACULTY RESIST TEACHING ONLINE?

There are two main reasons why some faculty resist teaching online: 1) lack of technical mastery, and 2) teaching style preference. To teach online, one must be more than familiar with the software. You have to know how to use it and how to develop a pedagogy that will work. The other reason for resistance is teaching style. If someone has been lecturing and has

developed great skill as a lecturer, it will be very challenging for that professor to adapt to an online format.

As a lecturer, you are the center of activity, controlling everything. However, when you teach online, you function more as a facilitator designing various learning experiences. If one teaches using a lot of interactive activities and/or group activities, the transition to teaching online will be much easier. But if one uses lecturing, the change in teaching methodology is substantial. Certainly, it is possible to videotape a lecture and put it online. But where is the interaction? Where is the opportunity for students to ask a question or interact with each other? For this reason, lecturing online doesn't work well. A brief video of a few minutes can be very effective. However, putting videotapes of an entire classroom lecture online doesn't work well because there isn't any opportunity for questions or interactions.

Therefore, it is reasonable for seasoned professors who have developed a high degree of skill in lecturing to resist teaching online. However, even the lecturer could have an online discussion board or blog, which could be done collaborative as I have explained earlier.

One could certainly teach online without using collaboration. However, as I have pointed out, there are many benefits of using collaboration. It is, however, quite demanding for the online instructor. Such an instructor must not only be a master of his subject matter, but also master the software and develop a pedagogy that works well with the technology. In essence, one needs to learn how to use online collaboration and online technologies.

Online educational technologies can be used to help to enhance learning among students. However, in order for this to happen, the instructor must understand how to use the technology effectively. As stated earlier, the online instructor is more of a facilitator and needs to know how to

use various software to produce the desired results. There are some great technologies available, but used in the wrong way can produce very undesirable results. An online instructor must carefully structure the course with learning activities using various types of software and tools. For example, a blog or discussion group might work very well in one context, but could prove to be very ineffective in another. Students also need to learn how to use various tools and software. An online instructor needs to be cognizant of the fact that not all students may be proficient at using a particular tool or software program.

How does a faculty member know what to use and when? Some of this comes with experience and some of this comes with training. I've been teaching online for seven years. Each time I teach the course I learn something about both critical thinking and how to effectively use technology. With the technology constantly changing, and for the most part improving continuously, learning how to teach online is a continuing process.

For faculty wanting to ease into online education, a good choice might be teaching a hybrid class. With this type of arrangement, part of the class takes place in a face-to-face classroom, while some activities take place online. A good online activity might make use of a Discussion Board or Blog, where the instructor could post a question generating a discussion that couldn't take place in class due to time constraints. Such an activity would compliment a regular face-to-face class and give both the students and instructor some exposure to online education.

In order for online teaching to be really effective, I believe that it must contain some element of collaboration. As Chancellor J. Keith Motley at UMass Boston said at the Technology Conference, "we need collaboration in education" (May 2011).

There are many free collaborative tools

available and collaboration has been proven to have numerous benefits to students. Online education offers many opportunities for students to learn a variety of subjects, think critically and work collaboratively. However, for online faculty to be effective in their teaching they need training and experience.

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