

BRIDGING THE GAP BETWEEN TRADITIONAL AND ONLINE EDUCATION WITH TECHNOLOGY AND CREATIVITY

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ABSTRACT

Enrollments of online programs have had strong growth recent years. As a residential professor who also has developed and managed online courses, the author illustrates how technology and creativity have been employed, and continuous efforts are required to help bridge the gap between traditional and online education.

INTRODUCTION

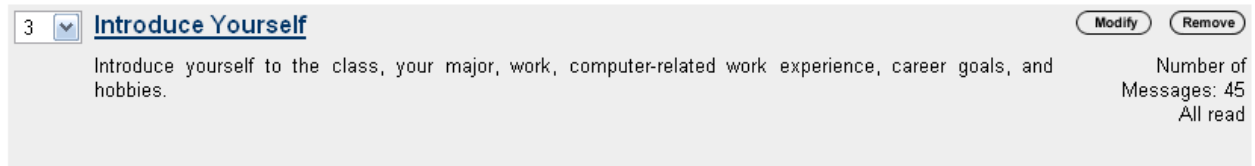
More students have embraced online learning. The flexible and convenient format of online study allows students to earn degrees without leaving jobs, and study at their own pace from home or the office. However the rapid growth of online instruction has caused concerns. In traditional education, instructors can physically monitor students taking exams, communicate with students directly. Online education, on the other hand, lacks face-to-face classroom interactions, and no best way of monitoring students taking exams. Through answering the following five questions, this paper illustrates how technology and creativity can help bridge the gap between traditional and online education.

1. How can one enhance interactions among students and with the instructor in online education?

Research done by the National Education Association showed that the most important and difficult aspect of teaching online is not using technology. Instead, it's creating a community among the students. "Otherwise, you're going to get student disengagement and higher dropout rates," says Rachel Hendrickson, the association's higher-education coordinator. (Carnevale, 2003)

Be creative in instructing the students to introduce themselves (Fig. 1). The author found that, in an online computer programming course, asking students to share their computer-related work experience proved valuable. In the class, there were always students who had worked in the information technology (IT) industry for years and some were even IT department managers. They were serious about learning and valued the degree they were working toward highly. Their sharing always encouraged other students and reinforced that learning is building knowledge and skills for one's career.

Fig. 1 Ask students to introduce themselves especially on subjects related with the major



Although what constitutes productive and generative conversations in online discussions and how such interactions can be orchestrated to nurture epistemic practices still remain open questions (Uzuner, 2007) and more research need to be done on that, interactivity is the heart and soul of effective asynchronous learning (Pelz, 2004).

Many distance educators believe that more teaching and learning often occurs when the instructional process is mediated by technology. “When I went to school,” Mr. Fluge recalls, “one person got to go to the board. That was great for that one person, but the rest of us had to think about what that experience was like”. “With online education, everyone goes to the board.” (Carnevale, 2003) With discussion board, students know that they are on display; the whole class will read and comment the postings. That can motivate students to work harder and think more before posting anything in the discussion board.

2. How can academic dishonesty be curbed on online education?

- a. The first step is making students know the expectations and required effort, for example: give a quiz on syllabus, course policies and keys for success. At the beginning, clearly state the expectations, learning outcomes, required time commitment, and keys for success, and give a quiz on those. That will make students take the time to read the syllabus, know the required effort and plan their schedule accordingly. Having a quiz on course policies and tips for success helps to reinforce them again periodically in discussion board.
- b. Some institutions use proctored testing centers. But that distracts from the convenience that draw students to online education in the first place.
- c. Ask each student to work on a unique project is effective. For example, in a programming course, the author gave a list of tasks that students were required to find a company, club, or an organization that has software need. Each student ended up with a unique application, even the core required tasks are the same. The possibilities of cheating were minimized. Also, students found such assignments exciting, fulfilling, and helpful in putting all the pieces together.
- d. Limit the test time short enough to make looking up the answers difficult, and that can be done easily in Blackboard with not only the multiple-choice questions, but also the essay or programming test. After opening the test file, students were given two hours to finish and submit the test. For computer programming classes, given that there are companies offer coding services for a fee on Internet, without the time limit, students can pay a fee and get a well-written program in just a few days.
- e. For the multiple-choice questions, use a big pool of questions; each quiz is designed to pull a certain number of questions randomly from the pool. Therefore, if two students want to share answers, first of all, it’s likely that their questions are different; secondly, even if some questions are the same, they are of different sequence, so given the time limit, it’s harder to cheat.
- f. Design discussion board questions creatively and keep helping students on time management. Time plus energy equals learning. There is no substitute for time on a task. Learning to use one’s time well is critical for students and professionals alike. Students need help in learning effective time management. Chickering and Zelda emphasized that allocating realistic amounts of time means effective learning for students (1987). Online students often face the challenge of managing their time among the responsibilities of a full-time job, family and their studies. In a

Java class, the author asked students to participate in the following discussion and interact with each other. Note that one of the questions is on time management where student were able to learn better time management skills from their peers.

Fig. 2 Students were asked to answer questions designed by the instructor

The screenshot shows a Blackboard discussion board interface. At the top left, there is a dropdown menu showing '12' and a link to 'Module 1 Discussion'. To the right are 'Modify' and 'Remove' buttons. Below the title, the post content reads: 'Read the "Discussion Board Expectations" document before you do any postings.' followed by 'Post at least one response to the following questions:' and a numbered list of five questions. The questions are: 1. How to set up the path so that you may compile and run Java programs from any folder? 2. What features make Java popular? You may need to Google search for more information. 3. How to zip the module 1 homework folder? 4. Share your computer-related work experience. 5. Share how you plan to use your time wisely through the week. Share study strategies that have worked for you. Below the list, it says 'Respond to at least two other students' postings.' On the right side, there is a summary: 'Number of Messages: 54' and 'All read'.

- g. To prevent students from printing the test and showing to others, in Blackboard, have the following Java Script in the “HTML” box of the instructions textbox of the test, then if the student hit “File”, and “Print” from the browser, it will just print blank pages.

Fig. 3 JavaScript that can preventing students from printing the tests

The screenshot shows the 'Test Information' configuration page in Blackboard. The 'Name' field contains 'Ch18 Qz' and the 'Description' field contains 'Quiz on Ch18 Building your own classes and objects.'. Below these fields are radio buttons for 'Smart Text', 'Plain Text', and 'HTML', with 'HTML' selected. There are also icons for mathematical symbols, code, and a 'Preview' button. The 'Instructions' field contains the following JavaScript code:


```
<STYLE type=text/css>@media print {BODY
{display:none} !important}</STYLE>
<SCRIPT language=Javascript
src="http://www.blackboard.niu.edu/blackboard/javascript/r
<STYLE type=text/css>@media print {BODY
{display:none}}</STYLE>
```

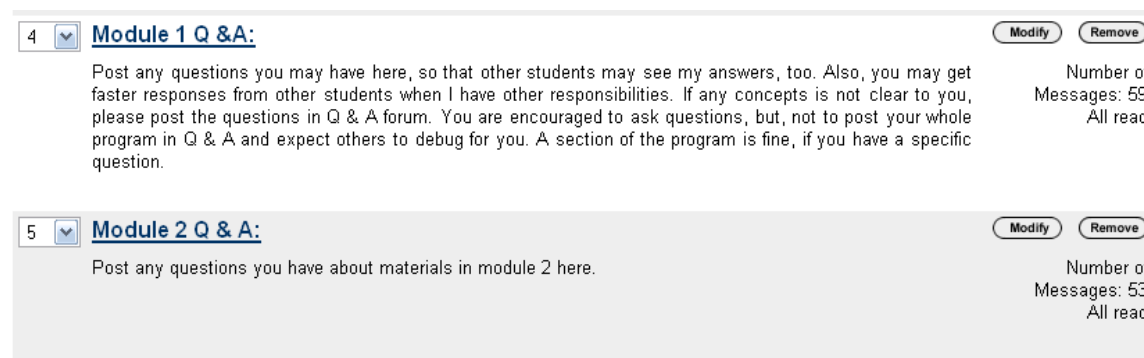
 Below the code field are scrollbars and another set of radio buttons for 'Smart Text', 'Plain Text', and 'HTML', with 'HTML' selected. At the bottom of the page is a 'Submit' button.

- 3. How can technology be used so that an online instructor can answer the same question just once and the whole class can hear or see the answer like in traditional classroom?

In the traditional classrooms, the professor's answer to one student's question can be heard by all students in the class; therefore, on the professor's side there is no need to answer the same questions twice, and on the students' side, there is no need to ask the same questions.

Interaction among participants is critical in learning and cognitive development. (Richardson & Swan, 2003). How can the instructor have productive interaction with the learners? The instructors, often times, have to answer the same questions more than once if email or Instant Messenger (IM) is used. At the beginning of the term, students were instructed to post any question, other than personal issues, in Q & A forums. If one student has a question, chances are that others may have the same question. Posting the professor's response to the first student's question in Q & A forum will allow other students in the class to see the question and the instructor's response. Thus much time can be saved for both the instructor and students, compared with using email or IM. Students were instructed to use email for communicating personal issues only. The following is a screen shot of Q&A forums instruction and the statistics of students' participation in a class of 19 students.

Fig. 4 Students are instructed to post questions in Q & A Forums



Every student in the class could see the instructors' answers. The author designed one Q & A Forum for each learning module so that students could easily find the specific questions and answers.

4. Given the higher faculty turnaround rate in online education, how can previous instructors' learned experiences be passed on to the next instructor to maintain the quality of the course?

There is a higher faculty turnaround rate in online education than in traditional education. The author learned that frequently asked questions (FAQ) are valuable assets. Based on questions asked in Q & A forums, instructors can build FAQ pools and organize the questions by topics, instead of by chapters, so that if there is a new edition of the textbook or the instructor decides to change the textbook, part of the pool may still be used. Treat the frequently asked questions as valuable assets that should be saved and passed on. With the FAQ organized by topics, not only future students do not need to go to Q& A forum as much, but the instructor can also save time in posting answers because there will be less questions, thus, they may afford to spend more time on activities such as creatively building online community.

Another good use of a FAQ is to list cases of academic dishonesty and explain why each one is considered as cheating. For example, copying something from Internet without listing the source is wrong. List cases in the FAQ, give clear definitions of cheating, and require students to read them at the beginning of the term. Each semester, accumulate different cases in FAQ. Again, organize FAQs by topics. Gradually, many assets will be accumulated. Passing the accumulated FAQs on to next semester helps the course instructors tremendously, especially new adjuncts.

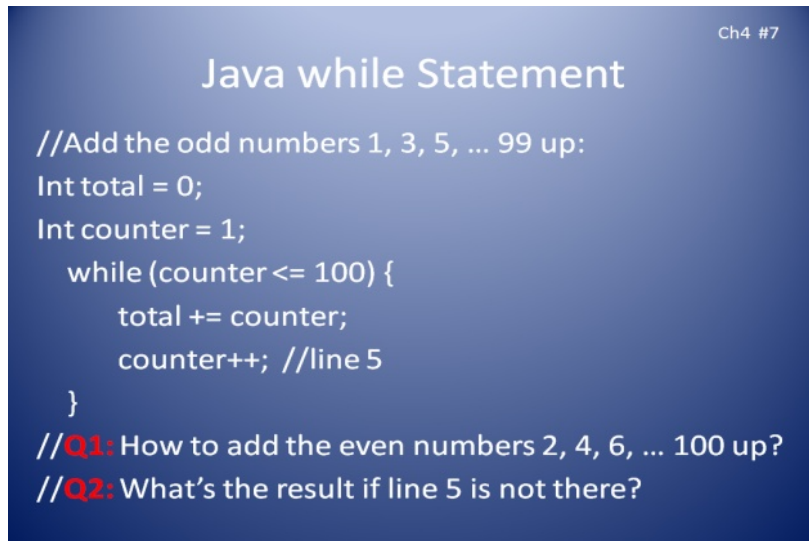
5. Is using more advanced technology always better for online education?

Not always. Not everyone is ready for the new technology. In a traditional classroom, students can interact closely with the professors. Technology is available for online learners to interact with the instructors to a certain degree. Many students still prefer learning from reading texts. Now, some textbook publishers offer web-based video instructions to go with the textbook, for example, Prentice Hall offers Cyber Classroom with their “Java How to Program” textbook. There is a code that comes with each textbook that gives access to a cyber classroom; in it, students can choose the chapter and topic to hear the explanation and watch the demonstration on programming. It’s like having a teacher in the front to explain any topic any time. Surprisingly, only 15% of the class chose to use the cyber classroom. Part of the reason is that some students are not ready for the technology. Although the publisher does provide technical services, but every computer has different configurations and some students are not willing to take the time to go through the trouble-shooting procedure that the publisher provides, some won’t even bother to install the software since it’s not required. Some just prefer reading the book at own pace rather than watching the video at the pace set by others.

Sidman & Jones (2007) did a case study regarding the impact of elected use of interactive skeletal PowerPoint slides on exam scores to combine technology with learning style theory and demonstrate a unique teaching and learning process. They reported that exam scores for the students who elected to use the interactive skeletal (partial) slides were significantly better in a higher-level (non-introductory) course than those students who did not use the interactive slides.

In addition to text explanations, charts, arrows, and bubbles in PowerPoint, embedding questions in the slides can make students think more. In traditional classes, students learn the concepts in classroom first before applying them to assignment, whereas some online students jump to assignment first, and then go back to find answers. To make sure online students learn concepts before attempting assignments, the author embedded questions in the Power Point slides. The embedded questions were designed in such a way that as long as the student read the slides or the books, they could figure out the answers. Have the same questions that were embedded in the Power Point file also listed as part of the homework assignment so that students may choose to either read the book or the Power Point first. The following figure shows questions embedded in the slide to engage students, like in a traditional classroom, students face questions asked by the teacher.

Fig. 5 Engaging Students in the PowerPoint with Embedded Questions



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Ch4 #7

Java while Statement

//Add the odd numbers 1, 3, 5, ... 99 up:
Int total = 0;
Int counter = 1;
while (counter <= 100) {
    total += counter;
    counter++; //line 5
}
//Q1: How to add the even numbers 2, 4, 6, ... 100 up?
//Q2: What's the result if line 5 is not there?
```

Not every student is ready for newest technology. Technology such as interactive PowerPoint presentation can enhance learning, although some students still prefer reading the paper textbook.

CONCLUSION

Given various differences between traditional and online educations such as test monitoring and interaction opportunities, this paper addressed concerns caused by rapid growth of online education by answering five frequently questions about online education. Adopting the technology that the public is ready for and using it creatively can help bridge the gap between traditional and online educations.

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