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Teach them to Fly:
Strategies for Encouraging Active Online Learning

Karen HARDIN
Cameron University
Lawton, OK, USA

PROBLEM

One of the hot topics in education in the past 10 years has been the shift of the role of the educator. Whereas, he has traditionally been the owner and deliverer of the knowledge (Sage on the stage), now his role is shifting to a guide and facilitator (guide by the side). The purpose is to give the students ownership in their own learning process. As technology becomes more sophisticated, automation is replacing students' problem solving skills, critical thinking and sometimes patience. On one of my evaluations in a 1999 online course, a student criticized that, "she's not doing the teaching, I'm doing the learning." Of course in my desire to encourage active learning, I took the response as a compliment, but the student meant it as a criticism. I began pondering the reluctance of students to take control of the learning process.

I've noticed this lack of problem solving, critical thinking and patience with young adults in the workplace. For example, I often visit Sam's, a warehouse store owned by Wal-Mart. When I check out, I pay with a check. The computerized register will print the check for me, so I allow the cashier to do that. I often ask him or her to add $15 to the total to give me cash back. It's amazing how long it takes these young adults to add $15 to the total because of their reliance on computers.

In another situation, when I was in an outlet shoe store in Texas, I purchased a pair of sandals. After I checked out, I noticed a sign that promoted, "buy one, get a second for one cent." Of course, I wanted to take advantage of this opportunity, so I told the cashier that I wanted to find another pair of shoes. She replied, "It's too late, your transaction is complete. I wouldn't know what to do." I said, "It's simple, I owe you one cent." She said, "I don't know how to make the computer fix it." After attempting many explanations of how she could return the shoes I bought, and re-process, I walked out of the store with one pair of shoes. The student lacked problem solving skills because of her reliance on the computer.

Online courses can tend to make students more dependent on the computer for problem solving.

STUDENTS COMMENTS

After several semesters of working with students in the online environment, I posted this discussion:

> All of you have taken courses and done well (for me it was History) and then 2-3 years later, you can't remember what you learned. That was probably because the learning process for that course was passive. You didn't have to participate, you just did what the teacher assigned, memorized what he said, spit it back out on a test to get the grade.
>
> The more effective way is active learning. This is especially the case in online learning, but internationally, there's been a reluctance by the student to take initiative. The bird's nest provides a great analogy. Traditionally, students were baby birds with their mouths open, waiting for the teacher to give them the worms. Now, our intent is to teach the student to fly, so that they can become lifelong learners.

What I want from you are your comments about the student's role in this shifting paradigm. Because you are participating in this learning opportunity while the medium is still young, you'll have valuable input.

Here are some of the highlights from the student responses:

- **I retain everything when its hands on. I hate classes that have the teacher lecturing for hours. Let the students initiate their own studying and learning**
- **If this class were taught in one of the labs, we probably wouldn't have the communication that we have with this class. You have to ask questions or get left behind.**
- **This class gives you a more responsible outlook, because you know that everything that needs to get done is up to you.**
- **I like how you are given the project and the deadline at the beginning and you work at your own pace throughout the course to get the projects done on time.**
- **I have had to discipline myself into being more responsible about making sure that my assignments are completed when requested.**
- **I have had to teach myself things through trial and error but Prof. Hardin was there when I needed the help has taught me to be more independent when it comes to completing a task.**
- **The online class experience has helped to stimulate the "teacher" in myself because I have had to teach myself to keep up with the assignments, projects, and make sure that I finish them on time and according to the directions**
- **I think an online class is more beneficial because I can, not only get help from my teacher, but I can also receive assistance [from] my peers which can become an advantage when doing projects and such [because] many of the students will have the same difficulties and questions.**
- **You are also given many resources such as the teacher, other peers, and course documents to refer to if any assistance is necessary.**

SOLUTIONS

One of the students commented about the deadlines of the course. In the mid-1990's, many institutions created fully asynchronous courses, allowing students to start and complete at their own paces. This model was highly ineffective because the tendency of busy students is to procrastinate. Therefore many students never completed the requirements of the course and of those who completed, a majority just met the minimum requirements to "get a grade" and move to the next course. With this knowledge, Cameron University decided to create courses with required deadlines and due dates. In the work-world, employees rarely have a task without a deadline, so Cameron decided to take the "real-world" approach.

When evaluating students' understanding of concepts presented, it is important to evaluate the higher level thinking skills. Rather than just knowledge and comprehension, ask questions that require application, analysis, synthesis and evaluation. The verbs that represent intellectual activity on each level of Bloom's Taxonomy are: (http://www.dlrn.org/library/dl/guide4.html)

Application
Apply, choose, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, write.

Analysis
Analyze, appraise, calculate, categorize, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test.

Synthesis
Arrange, assemble, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, write.

Evaluation

Appraise, argue, assess, attach, choose compare, defend estimate, judge, predict, rate, core, select, support, value, evaluate.

Instead of multiple choice questions, ask multiple answer questions. Instead of "all of the above," or "none of the above," require the student to select all correct answers. I use this technique regularly. Though students complain that they cannot eliminate incorrect possibilities, it is a better evaluation of their learning because students must analyze all answers, because any or all of them may be correct. William Pierce suggest another method of quizzing, "Design self-testing quizzes and tutorials on basic chapter content. Instructors can use the quiz as a gateway to the online discussion, allowing only those students who pass the quiz into the discussion."

As you continue to evaluate learning, when assessing the understanding of a concept, instead of asking students to re-state facts, ask them to apply concepts. When I teach web design to my online class, they learn the difference between screen-based layout and paper-based layout. When evaluating their learning, I give them links to different popular web pages and ask them to evaluate whether the page implements advised layout and design techniques.

My course is project-based. After three projects that develop a basic understanding in Web design, students are required to build web sites for subject matter experts. The students work with "real world" clients. I arrange for opportunities with CU faculty and area businesses to allow students to work with subject matter experts to create and upload websites for them. The students and the subject matter experts regularly comment how beneficial the project is. In his article titled, "What Makes a Good Online Course," Lee R. Ally encourages similar activities. "Online learning should not exclude real-world doing.... The best Web [courses] provide a rich array of offline activities for the students to be come involved in 'active learning.'"

When introducing new concepts, avoid giving students step-by-step procedures. This is difficult in my field. Technology textbooks give students step-by-step instructions, thus causing reliance on the textbook. Instead, I prefer to give students overall direction, so that they can discover the procedures. When using an HTML editor, I give students an overview of the menus and instructions on how to get started, but each student must continue to discover options within the menu to successfully complete requirements of the project. Bill Dyer, who teaches Web-based Unix courses as an instructor at Amarillo College says he rarely gives a full answer to a course-specific question. "I'll give pointers and keep the student on the right track, but I want the students to figure the problem out for themselves. In those cases where they just can't get it, I may give them the answer straight out and promptly give them a new assignment" (Raths, June, 1999).

This technique extends to answering students' questions. Give students opportunities to respond to each other, rather than immediately answering all questions. I post a "student questions" discussion board. I don't allow students to ask questions via email, they must post them in the discussion board. Students often answer each other's questions before I do, but if the answer is mis-guided, I can re-direct with the correct response. Don Winiecki, who teaches asynchronous Web-based courses in instructional media design and qualitative research methodologies at Boise State University comments, "I'm not the guy with all the answers, anymore." He says research shows that instructors talk 90 percent or more of the time in the classroom, whereas online instructors post fewer than 10 percent of the comments. "It's a very student-centered discomfort, unsettle confirmed notions, uncover misconceptions, inspire curiosity, pose problems. The point ... [is to] dipsel complacency by creating cognitive dissonance ... Students who experience a gap in their knowledge will seek to fill it."

Another important strategy is to build interactivity into the course. One of the common mistakes online instructors make is to create digital correspondence courses. Require that students interact with the materials, their classmates and you.

> **Design web courses to help students construct knowledge, not simply transmit information. In order to emphasize student construction of knowledge, skills and abilities versus instructor transmission of information, the Web site needs to be more student centered. That is, the Web site is designed as a learning environment for students, rather than a bulletin board upon which to post cognitive knowledge" (Ally, November 2001).**

To interact well, students will be required to think critically. Critical thinking is an important aspect of learning. "Critical thinking, defined broadly as a dialogical process that produces an increasingly sound, well-grounded and valid understanding of a topic or issue, involves participants developing and examining their ideas as fully as possible, presenting them clearly and credibly to others, and examining and challenging the ideas of others" (Lang, Sept 2000).

Good discussions require critical thinking. Several of the students commented about the amount of communication in the online course. I require communication in the discussion board. When compared with face to face courses, this is where online courses excel. Face to face, an instructor can ask a question and have time for a couple of students to verbalize an answer. In the online course, an instructor can require every student to actively participate in the discussion.

When I first started requiring participation in a discussion board, students responded with individual comments. For example, in one assignment, I require students to evaluate aspects of web sites. They look at layout, design, color scheme, white space, etc. and then post their comments on the discussion board. Many students would create a written document before entering the discussion board and then copy and paste his response into the thread, never reading other students responses. This defeats the purpose of a discussion board. As a solution, I began posting the following directions on each required discussion forum: "Read all responses and carry on a discussion. Don't repeat anything that's already been said, but respond why you agree or disagree. Your comments should be well planned and complete. You will receive 10 points for your complete participation." Students must enter into dialogue with classmates and thus think critically about their responses to the posed question. David Lang, a proponent of Writing Across the Curriculum comments,

> **One motivational factor is the need people have to represent themselves favorable to others. People want—Maslow would say need—both to be accepted and to excel. In [face to face] discussions, the major channels through which people meet these needs are nonverbal. Online, however, the nonverbal channels are not available, so in order to represent oneself favorable to others, one must write well. In addition, because online writing is published and can remain "on public record" for weeks, the significance of the writing increases (Peirce, September 2000).**

Maggie McVay, who is on the distance learning faculty at Franklin University in Columbus, Ohio discusses students who might not participate. "Enforce communication. Make it an assignment to answer specific questions and respond to two peers in a bulletin board." (Raths, June, 1999).

Using the Socratic method of teaching is very effective in an online course. As defined by William Pierce, "its basic structure begins with inquiry, leads to perplexity, and ends with enlightenment" (Peirce, September 2000). Bob Mosher, a Rochester, NY based online training consultant states, "Instructors should ask more questions thanthey answer… Mentor, to me, means guide, not dictator. (Raths, June, 1999).

Implementing some or all of these techniques into an online class will actively engage students withthe materials, classmates and the instructor, thus creating a positive learning environment. These techniques decrease the focus on the technology and develop students who have the skills to become life-long learners.

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Biodata of Author:

Education:
Master of English, University of Dallas
B.S. in Secondary Education with specialization in English and Physical Education Dallas Baptist University Who's Who Among American College Students
Basketball and Volleyball scholarships

Current:
Director of Distance Learning, Asst. Prof., Department of Multimedia Design, Cameron University, Lawton, OK

- **Recipient of International Award in Teaching, Learning and Technology, 2002**
- **Tenured 2002**
- **Named to Who's Who Among America's Teachers, 1998, 2000**
- **Currently directing development and implementation of online degree programs.**
- **Formed Planning and Organization Support for Teaching (POST) committee.**
- **Responsible for training faculty in instructional technology including distance learning.**
- **Involved in curriculum development for B.S. & A.A.S. degrees in Multimedia**
- **Development 1997-98**
- **Currently serving on Faculty Development committee 1996-present**
- **Currently serving as institution advisor for HB 1815 advisory committee.1998-present**
- **Served on campus accreditation committee 2000-2002**
- **Served on Intellectual Property rights Committee. 1999**
- **Directed Instructional Technology Collaborative Effort: A collaboration of 4 institutions to develop computer based supplemental materials 1998**
- **Taught 1st online course at Cameron University.**
- **Together with Provost, created faculty instructional technology support center.**
  Courses taught: Honors Composition I, Honors Composition II, Composition I, Composition II, MultiMedia Production Techniques, Web Communications and Design, Distance Learning Development.

Contact addresses:
karenh@cameron.edu
http://www.cameron.edu/~karenh