
Technology: Servant or Master of the Online Teacher?*

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ABSTRACT

TECHNOLOGICAL ADVANCES ON THE INTERNET and the World Wide Web have tended to drive online pedagogy. It is time to reverse this relationship and make the needs of teaching and learning take priority. The authors propose three different formats for utilizing the Web in online and classroom instruction. These formats were developed in a program for undergraduate legal studies dealing with three levels of learning: Introductory, skills, and seminars.

INTRODUCTION

One of the dangers of recent advances in instructional technology is that instruction and instructors are often driven by technology rather than having technology serving the needs of instruction. Two causes for this inversion are apparent. First, instructors are discovering new ways to communicate with students and often are more excited by the vehicle than what it communicates. Second, each new tool requires an investment in learning and time to assess its effectiveness. Teaching on the World Wide Web is so new that most instructors are engaged in the learning phase, something that may never end, and very few have seriously addressed the assessment problem.

The comments that follow are based on three years experience in different forms of instruction using the Web in undergraduate legal

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studies courses. When I began, my institution, the University of Central Florida, had no official Web-based course; we now have dozens and are planning many more. When I began, most web-authoring tools were crude and awkward; it was easier to learn HTML code than to use the authoring software. The teaching formats I developed were a natural product of what I learned to do and what I thought would be effective. I found myself using three basic formats and only gradually began to analyze how I came to develop these and assess their appropriateness and effectiveness.

Three formats are presented here for online teaching/learning. The formats are based on progressive levels of learning within a specific discipline, namely, foundation (primarily content), skills (analytical), and practice (applying content and analysis). Any course might well combine all three levels, but we hope that a student who begins as a novice will follow steps toward some level of mastery in the field, and the approaches to teaching at different steps is likely to be the most effective method. Online course may use quite different formats or styles for different levels. Finally, this paper provides some example of Web use illustrating, in particular, the application stage, which uses the Web as an enabling or preparation tool as an adjunct to a classroom course.

ANALYZING COURSE OBJECTIVES

The goal here is to address pedagogical concerns rather than either administrative goals or technological problems. This may not seem practical since courses require institutional support, but at least one format, what I call 'web-enabled' or web-enhanced, merely requires effort from the instructor, albeit that effort at times seems overwhelming. Practically speaking, institutions would prefer a technological 'cookie-cutter' or 'one-size-fits-all' solution to distance education. My answer to that desire is that it is simply premature at this point in our understanding of online teaching and learning. We must also be wary of the natural desire of instructors to enter online teaching quickly and efficiently. Veteran teachers must recognize that 'teaching online in six easy lessons' is a sham. It is not my purpose, however, to reiterate the need for institutional and technical support, the exorbitant amount of time needed to set up and maintain an online course, the dangers for tenure-seeking assistant professors in committing time to online teaching rather than research and publication.

I am concerned with the more fundamental problem of teaching and learning. In particular, I focus on a standard, three-hour, semester course taught at a university, specifically for advanced undergraduates (juniors and seniors).

STUDENT MOTIVATION

My students reflect the well-noted trend¹ in American higher education toward decreasing motivation among students. They maximize their

efforts by minimizing their work, always aimed at tests and grades. This is nothing new, of course, what is new is the loss of a culture of learning in which learning is an end in itself in addition to its immediate practical functions.² The culture of learning also accorded instructors a high degree of respect and trust that encouraged instructors to lead and students to follow. The factors that have caused the decline in the culture of learning are too diverse and complex to address here, even if I were confident that I understood them. Suffice it to say that teachers rarely motivate students who are antagonistic to the learning process and only occasionally motivate students who are simply complacent in their ignorance. The World Wide Web offers an opportunity to trick students into learning by using the novelty and stimulation of the computer and monitor, their visuality and interactivity to create a learning environment divorced from the perceived tedium of the classroom lecture.

This suggests a caveat: **Do not attempt to translate a lecture course into a Web course.** The logic of this statement should be obvious. Many courses now offered consist primarily of dull lectures, from which have been removed the only interesting part of the course, namely, the personality and style of the professor. All this does not necessarily mean that every Web course can or even should be exciting. What it means is that we should think about format before we create a course. And we should take into account the motivation, or lack thereof, of our students. (Many instructors will find to their delight that online students are generally better motivated than the general student population. I fear this may change, as online courses become commonplace.)

GRADING

Although not necessarily the most time-consuming of online teaching problems, grading is a persistent problem. We ought to entertain the proposition that grades have been a principal source of the decline in higher education, particularly with reference to student motivation—they are motivated by grades rather than learning. The dilemma for the instructor is constituted by the conflicting pulls of grades as a coercive tool to make students learn and the inevitable loss of learning purpose. The ABCDF grading system is so pervasive in American higher education that it has become institutionalized throughout society. I suspect a very large proportion of today's college students are children whose parents believe that course grades are an accurate measure of ability and achievement. I suspect a majority of college instructors believe that GPAs (Grade Point Average) are a good measure of a student, just as the previous generation believed IQ tests pinpointed a person's intelligence.

The problem with grades is aptly summed up by Alfie Kohn (1993, p. 200):

The signs of such [grade] dependence are questions such as “Do we have to know this?” or “Is this going to be on the test?” Every educator ought to recognize these questions for what they are: distress calls. The student who offers them is saying, “My love of learning has been kicked out of me by well-meaning people who used bribes or threats to get me to do schoolwork. Now all I want to know is whether I have to do it—and what you’ll give me if I do.”

TESTING

The greatest challenge to the teacher today may be to devise tests that make students think rather than memorize. Testing online presents many problems that do not occur in classroom testing, but both present the underlying problem of the message given to students that student and teacher should focus on tests because tests determine grades and grades are all that matters. Long ago, Kenneth Eble pinpointed the problem when he said, “a great deal of sloppy testing exists because the true purpose of tests is to arrive at and defend a grade. The cart is before the horse. . . .” (1968:144). A few pages following this (p. 147) he made a comment that ought to be carved in stone in Academia:

The most successful test I have ever used incorporated in the test procedure itself the substance I was trying to teach.

Eble was teaching a course in Ethics and buried in the procedure an ethical problem. It takes imagination to come up with such procedures, but we ought to try. For example, I am developing a multiple-choice test that would incorporate a set of rules requiring complicated decision-making on the part of the students. My object is to establish a testing environment that makes picking answers much more active and that reflects legal process. The daunting task which I have not yet solved concerns how to make the student think and learn about rules, justice, and fairness in the context of tests. Students are very much concerned about fairness, but mostly in a narcissistic way—to explain or justify their mistakes. I am looking for a way to turn that interest into an objective analysis of testing.

Testing offers us an opportunity for intensive learning. In general, students are the most prepared to do concentrated thinking when confronted with a final examination. We should either abandon testing (and grading) altogether or work very hard to make it the kind of learning experience that we believe in.

The Web

The World Wide Web is challenging in both a positive and negative way. On the positive side, the Web offers radically new means to present college courses. The challenge consists in learning how to best utilize this complex tool. On the negative side, the Web has a compelling quality that encourages an uncritical acceptance of all that could pass as knowledge, fact, or wisdom to the naïve, ignorant or defiant.³ Those who teach online

must assume the burden of showing the path of knowledge through this vast maze of information.

This means that instructors should exercise the same skepticism toward online information as they expect from their students. It is very difficult not to be seduced by the gadgetry of available technology. For example, an instructor recently told me that some of her female students were suddenly silenced when put in a broadcast classroom. Their concern over their public appearance overcame their desire to participate in classroom discussion. Whether or not their concerns are reasonable does not matter so much as the point that technological advances may have unanticipated negative learning consequences.

The Web offers the following additions or enhancements to more traditional teaching styles: 1. **Interactivity.** The role of the student as a passive learner is no longer a necessity. Not only can teacher and student communicate synchronously and asynchronously, but also programs can be devised such that a student enters into a computer dialogue with the program. Students may also interact with each other in forms not available in the past. 2. **Visuality.** The Web is a graphic medium that employs the visual channel to a degree not experienced in even the most dazzling classroom performance of the past. Exploiting this visual channel is a monumental challenge to instructors who were brought up to believe that the authority of a text could be measured by the lack of pictures. 3. **Malleability.** The instructor who is in charge of a Web course can make changes in the Web site at any moment—every course is a **work-in-progress**.

THREE MODELS OF WEB UTILIZATION IN TEACHING INTRODUCTION TO LAW⁴

The three models described below cannot be considered all-inclusive, nor are they mutually exclusive. By making every possible combination, we could arrive at several models, or perhaps just one since the goals of each model is arguably inherent in most college courses.

The models are presented in order of intellectual development, from lowest to highest, which ordinarily will correspond to grade level, commonly reflected in a course numbering system—e.g., Chemistry 101, 102, etc.

A social science bias may be inherent in the scheme.

Level	Web Label	Development	Goal	Style
Introductory	Enchanced	Acquisition	Foundation	Memory
Skills	Online	Analysis	Skills	Self-assess
Seminar	Enabling	Dialogue	Practice	Argument

Correspondences to the SOLO⁵ Taxonomy

Level	SOLO Label	Learning Characteristics
Introductory	Concrete	Commit content to memory
Skills	Generalization	Application exercises
Seminar	Formal	Discussion and debate

The SOLO taxonomy borrows from Piagetian developmental stages, applied loosely in this instance to developmentally mature persons, i.e., college students. The operational premise is that college students are led in each field through a series of stages of thought roughly corresponding to the stages of mental development they went through generally from childhood through adolescence. The flaw in this metaphor is that the students have already reached some degree of mental maturity and are quite capable of analytical thinking in general although not skilled in the language and premises of a particular field of study.

Level One: Introductory

Typically, introductory or **survey** courses emphasize the delivery of content in the form of basic information about a field, its consensual categories, terminology, definitions and concepts. At the university level, such courses are frequently large classes taught by lecture with minimal opportunity for questions and discussions and the assumed learning methodology is **lecture-notes-testing**. Such courses may in fact require a very low level of thought.⁶ Intellectual demands are made in terms of **quantity** of content, **abstractness** of lecture, and **trickiness** of test questions.

Level One and the Web (the Web-Enhanced Course):

Delivery of content may be accomplished in a variety of ways. Obviously the lecture is the traditional approach but is least efficient in virtually every respect: 1. It uses too much space. 2. Too much time is spent because of the oral channel used. 3. The inconvenience of attending class may not be compensated by what is **heard**. 4. It relies heavily on the charisma of the instructor and is often judged on its entertainment quality. The advantage of the lecture consists primarily in face-to-face communication, albeit quite one-sided. For some learners this may be the most effective way to deliver content. Much depends on the personal appeal of the lecturer.

Nearly all the content may be presented in printed form or by way of computer-diskette, compact disk, or Internet. The principle advantage of the Internet is its editability; revisions, last minute additions, notifications are virtually instantaneous. The Web can be visually stimulating but very

tedious for lengthy narrative content delivery. At this point in time, most people prefer the print medium for lengthy content.

What is a 'Web-Enhanced Course?'

Using a model employed at the University of Central Florida, a web-enhanced course is one which utilizes the World Wide Web to deliver content or assist in delivering content (say, in print form) accompanied by minimal class meetings. Classes are designed to solve problems with the content and the technology and to test the students' acquisition of content.

Where content delivery is the primary aim, web-enhanced courses are most suitable for the following reasons:

1. Content is relatively stable and fixed; there may be a general consensus as to what should be learned.
2. Class time is minimized—a convenience for student, teacher, and the institution (at the University of Central Florida, for instance, classroom space is at a premium due in large part to uninterrupted major growth in the university and the region).
3. The Web is the cheapest medium for delivering content, disregarding (instructor) labor, which is a real concern
4. Hyperlinks permit quick access to a multitude of websites.

Developmental Level (Acquisition):

Teaching associated with this level relies on the lowest levels of mental activity. Although the professor may be presenting analysis at the peak of intellectual effort, the student is operating at the lowest. The subject might be the Whorfian hypothesis, i.e., the influence of obligatory grammatical categories over perception, but the student is obliged to replicate the statements of the professor in the expectation of tests which focus on the ability of the student to accurately capture the lecture's notes.⁷ Objectively speaking, there is no need for a live presence. In fact, teachers who attempt to go beyond the lecture-notes-test model are resented by many students.⁸

Goal:

The purpose of such courses is to provide students with a foundation for more serious inquiry into the field. Acquisition of background content, terminology, concepts basic to the field form the body of the course. Theoretical considerations are often introduced but instructors usually do not expect students to master difficult concepts.

Reasons for Holding Classes:

When teaching introductory or survey courses, students are operating at various intellectual levels and are new to the field. They have many questions. Also, classes provide the opportunity for testing, which is problematic when teaching completely online (self-assessment testing is

preferable in strictly online courses. See below). Not only can quizzes be given in class, but also the instructor can discuss them once they are collected. Large classes can use objective (multiple-choice, true-false) testing, short answer questions, etc, where the instructor's time is a concern. Essay exams are unnecessary to check content acquisition but may be used to gauge **understanding**. If understanding is the goal, more face-to-face classroom time is appropriate.

Solo Taxonomy

The developmental level is **concrete**. Although the materials may contain abstractions of a high level, the learning method does not.⁹ Performance rests primarily on effort and secondarily on inherent or acquired memory skills. This may dismay some instructors desirous of rewarding (with grades) the **good** student, i.e., the student operating at higher order thinking levels but is routinely neglected in lecture-type classes. Essay tests may aim at higher-order thinking but may in reality measure writing skills and memory instead. This is not to say that writing skills, expression, and intelligent discussion should not be assessed; that is an issue perhaps best left up to the teacher. But the point here is to forestall criticism that the testing is aimed at a low level of mental function.¹⁰

It is not difficult to devise objective questions that are conceptual in nature or that call for reasoning rather than merely memorization.¹¹ Our preliminary data, however, suggest that such questions do not distinguish between students (Pyle & Dziuban, ms. 1998). Our findings indicate that students are distinguished merely by the number of right and wrong answers **regardless of the mental skills addressed**. Further inquiry may reveal a distinction, but it must be much less important than conventional wisdom would have us believe. The data was collected in an introductory undergraduate law class and it is possible that introductory courses have a leveling tendency absent in more advanced courses where accumulated knowledge and understanding affect performance.

Skill Level

An intermediate level may be identified by the learning of **skills**. Vocational training is characterized by a concentration on skills. In liberal arts fields, "skills" should be interpreted to mean mental or intellectual skills, although so-called "methodology" courses aim at specific practical skills, often with a minimal intellectual component.

Online instruction is particularly well suited to this level of instruction for the following reasons:

1. The acquisition of skills depends to a great extent on the preparation and ability of individual students so that the self-paced feature of online instruction allows students to comfortably acquire the skills. Motivation, effort, and self-discipline determine performance. Where these are lacking, the online course encourages their development. Attrition

problems are common and must be addressed by policy, preferably policy of the institution (it is assumed here that most institutions do not follow a policy of unqualified advancement).

2. Online courses may be designed for self-assessment. In fact, online instruction **demand**s the development of self-assessment exercises by virtue of the absence of a feedback loop between teacher and student. The computer tutorial (see, for example, <http://junior.apk.net/~jbarta/tutor/tables/index.html>) is a fundamental example of skills training and is ubiquitous and effective on the Web, which means, of course, that web-surfing students are familiar with this method and generally accept and appreciate it.

3. The online course saves space for the institution and time for students and teachers. Online courses usually entail a great deal of e-mail, and many instructors use the time gained to offer a weekly forum or guest speaker—all of which mediates the faceless anonymity of online courses.

4. Student performance may be automated—graded on the basis of completion and timeliness.

5. Clarity of task, explicitness are required when Web courses are offered without classes.

The developmental feature labeled “analysis” is best described in relation to an example.

Skills include **thinking**, even very high order thinking. In addition to a variety of content and definition quizzes and self-assessment exercises in my introductory law class, I devised a complicated set of exercises based on **case briefing**,¹² which started with fact-retention and evaluation exercises and led slowly in stages to exercises requiring students to draft a rule designed to provide for an exception to a rule that had been found to be too general when applied to a real dispute. A full discussion of the exercises and our study of the results, as well as exercise samples, may be found at: <http://reach.ucf.edu/~aln/pyle>.

The stages of cognition that each exercise represents may be found at the website and are here reproduced to illustrate thinking levels as skills:

(The **stages**, e.g., “Pre-structural/Pre-novice,” refer to cognitive developmental stages in the child hopefully, not applicable to college student except perhaps the very highest level of cognition.)

Pre-structural/Pre-novice:

At this level problem solving is seriously deficient because students do not understand the context of the problem. They fail to distinguish the relevant from the irrelevant and tend to resort to guessing early in the cognitive process. They miss all the hints and cues furnished by the test developer.

Case Briefs: Students operating at this level are unable to distinguish questions of fact from questions of law, specific events from general principles.

Exercise: A complex story is told and students discover how accurately they have learned the story.

Uni-structural/Novice:

At this level, students are one-dimensional and concrete, unable to contemplate multiple causes. There is an absence of concept formation; problems are viewed as single cause and effect relationships. The student approaches learning as a memorization task. Processing multiple elements proves difficult at this stage. Structurally complex problems are reduced to independent transformations.

Case Briefs: Students at this stage are struggling with relevance of facts.

Exercise: Students must discriminate between important and unimportant facts in a story (relevance).

Multi-Structural/Advanced Beginner:

Students process multiple elements of a problem to arrive at a single solution. But the elements are processed separately in a linear fashion. As the number of elements increases, the process becomes unwieldy. This stage, however, represents the beginning of multiple-task problems.

Case Briefs: Students attempt to judge the relevance of facts with reference to one principle (rule or law).

Exercise: Students must judge relevance in reference to a rule.

Relational/Competent

Students appreciate interactions among individual elements. Although they arrive at singular solutions. Students expand the problem to reach a solution beyond the initial context, creating a variable that is a function of the originals. This level of thinking allows for planning.

Case Briefs: Students learn issue-spotting—recognizing the principle issue to be decided by the court.

Exercise: Students must choose among alternative statements the one that most accurately describes an issue in a case they have read.

Extended Abstract/Proficient:

Students combine observed elements into hypothetical constructs or latent dimensions. This process leads to multiple solutions, all of which are reasonable or at least defensible. Insight and intuition help students realize that additional information is required, information that must be hypothesized or deduced. Students must learn to deal comfortably with uncertainty while they are manipulating multiple abstract systems and concrete elements.

Case Briefs: Given an unresolved legal problem, such as a new problem presented to a lawyer by a client, or a problem imperfectly resolved, as a case on appeal, students must deal with alternative solutions to complex problems.

Exercise: Students choose between alternative choices among multiple solutions.

Latent Structure Analysis/Expert:

At the highest stage of cognition, students operate with data elements they have transformed into latent dimensions in order to manipulate solutions at the abstract or symbolic level. They think in terms of interacting hypotheses that cannot be readily proved empirically or from their experience. It is common to resolve problems by developing archetypal forms and simplified hypotheses. Reducing the problems by synthesis and interaction permits the thinker to design action despite uncertainty, ambiguity and incomplete information.

Case Briefs: This level of thinking is required for the application of law (adjudication) and the making of law (legislation).

Exercise: Students must identify the reasoning of judicial opinions and go on to analyze extraneous factors which affect results.

Seminar Level:

This model employs the Web as a supplement to the classroom and is not, strictly speaking, an online course. Nevertheless, the Web is an integral part of the process and not merely an **enhancement**. This approach borrows from the advanced graduate seminar course, which operates at a sophisticated level of discussion and argument. Advanced undergraduates can operate in this environment if properly prepared. The preparation uses the Web as an enabling tool. If students have done their **homework**, they come to class with knowledge and the beginnings of discussion, argument, or debate.

Advantages:

1. Maximizes functional class time. Students and instructor can go right to the heart of the subject under discussion as soon as the class starts.

2. The interactivity available through the Web and the Internet creates a new dimension to teaching and learning. Since communication can be either synchronous or asynchronous, the limits of group interaction and teacher/student interaction caused by the physical classroom are indefinitely extended by the virtual classroom, or perhaps we should call it the "virtual seminar". At any rate, a dialogue is started that leads to the classroom and may continue even after the class time ends.

How this method may be used is best demonstrated by example. The following description refers to the course "Women and the Legal System,"

a special topics course in the Legal Studies program at the University of Central Florida. This approach has been used for a year in a course called "Law and Society" in a simpler form, which will be modified in the spring of 1999 along the lines here described.¹³

The course is devoted to student presentations of current controversial issues and their legal ramifications. The issues are framed by readings from two books in the *Taking Sides* series from Dushkin Publishers/McGraw-Hill Co. Each issue is introduced by the editor, followed by a "pro" and "con" analysis of the issue by authors with opposing viewpoints. Each issue is then closed with a 'postscript' statement by the editor.

The issues in the *Taking Sides* series are treated in the course as a focus for open discussion following presentations by two students, one taking the PRO argument and the other the CON side. Since the course is a Legal Studies course particularly addressing the subject of women and the law, presenters and discussants are asked to consider the legal ramifications of the issues.

The presenters submit a summary of their arguments to be posted on a webpage devoted to that issue. Other students must read not only the issue in the text but must also read the summaries by the presenters before coming to class.

The webpage for each issue begins with comments by the professor along with a set of questions formulated by the professor for further consideration. Students are encouraged to access WebCT forums that are set up for each issue.

The objective is to prepare students with more than the content of the topic for discussion. Each student has ample opportunity to consider not only the issues but also underlying assumptions and legal ramifications of the issues. Any reasonably diligent student comes to class ready to discuss, debate and challenge other students and the professor.

Discussion in class mimics the Socratic questioning characteristic of law school with the professor acting as something of a provocateur.

HYBRID COURSES

The tripartite division of courses above simplifies a more complex reality. The functions of the three types may all be desirable in a single course, or any combination of two of them. Some examples might be useful. Many courses may call for both the acquisition of content, terminology, etc., but also go well beyond into substantive discussion of the meaning and application of content in either theoretical or practical contexts. Many instructors give quizzes on reading assignments to require students to read and understand the content of their assignments so that classroom lecture or discussion may begin with a basic assumption that the students have a basic grasp of the materials. The danger, of

course, in giving such quizzes, at least in my experience, has been that students perceive the quizzes as providing the limits of the instructor's expectations.

I have devised an approach to resolve the quiz-grade dilemma, but have not yet tested it. In order to disabuse the students of the notion that testing can be satisfied by a cursory knowledge of the materials, I give essay quizzes, i.e., I inform them that they will receive an essay question on each of the major themes of the course during appropriate weeks of the class meetings where their assignments deal specifically with a theme. For example, trial and appeal is a theme and it is also a chapter in the textbook. The week they read that chapter, they will have an essay question on that subject. This occurs long before the multiple-choice questions they will answer on their midterm examination and should prepare them for the prospect of analytical questions. The midterm examination should follow through with at least one important essay question.

ONLINE CHALLENGES

Teaching using the Web presents a special challenge older generations of teachers did not have to face. The Web and the technology associated with it changes so fast that users must run just to keep up. This diverts attention from more important problems. If we think of the World Wide Web as a medium for teaching, we necessarily move to questions of the nature of this medium, what it can do, what it can do well, how we develop teaching styles consonant with the Web and with our personal styles and pedagogies and how we integrate it, or not, with existent educational institutions. And all these questions must somehow fit the learning strategies of our students.

The Web provides a means to deliver messages far grander than anything generally imagined ten or fifteen years ago. In higher education thus far, delivering messages has constituted nearly all of what has been done on the Web. The messages are often prettier, more stimulating, and multi-directional but otherwise not much different from a good book with a good index and visual aids where appropriate. If Academia focuses on giving grades, credits and degrees, there is little reason to believe the Web will offer much more than convenience. Nevertheless, those teachers still imbued with the spirit of learning, desiring to help students become better learners and thinkers, have been given a rare opportunity to transform the cadaver we call higher education.

Online teaching demands innovative approaches to teaching that requires teachers make their procedures **explicit**. This is not immediately apparent to those who have not taught online. To illustrate the point, let me give an example I encountered with my first online course. I wanted to teach students how to **brief** judicial opinions that they were reading. A case brief summarizes a decision into its basic components. When I taught

this in class, I took a case and dissected it, giving each component its appropriate label and elaborating on what they meant, answering questions and clarifying mysteries. Online I had no such luxury. Not only was I compelled to express every facet with clarity; I also provided self-assessment exercises that worked on the computer. The students relied almost entirely on the computer to learn what I was trying to teach them to do. When something went wrong, I was inundated with email about the problem. At first this made me think that lecture classes were child's play and then as I thought more I realized that 'child's play' may not have been a metaphor but the game we often play instead of teaching.

Online teaching, then, offers the opportunity to rediscover learning. We must examine closely what we are doing, what we want the students to do, and what it will take to make them decide they want to try our way. Thus far, most online courses in higher education have been driven by institutional needs, desires, and sometimes dreams for expanding the delivery of courses based on new technologies (or new uses of old technologies). For the teaching faculty this entails a steep learning curve, especially for those in non-technical fields. Technology and technicians have dominated course development in many of its details. Now it is time for teachers who have gained a thorough understanding of the technology to take charge and explore the new ground technology offers.

NOTES

- ¹ The extent of public awareness of the absence of motivation is demonstrated by the title of columnist John Leo's page in *U.S. News & World Report*, "No Books, Please; We're Students," (16 September, 1996, p. 24).
- ² Sacks, 1997, categorizes the learning culture of professors as 'modern' while that of the students is 'postmodern.' The difference seems to be that of a tradition of education that seeks truth and wisdom through objective critical thinking based on a belief in the perfectability of knowledge versus a skeptical, often cynical, deconstructionist attitude that views the modern perspective as misguided and oppressive, a tool of power, class, and particularly white eurocentric males.
- ³ Langer, 1997, describes the Web's "epistemological anarchy" with some wit: ". . . as much junk and debris exist in cyberspace as in cosmic space. It may be attractive and glittering junk, but it is, even by a different name, ontologically, still, and mostly, junk." He worries that students are conducting uncritical research on the Web before they have learned critical scholarship from the printed literature that has been subject to criticism by a community of scholars.
- ⁴ The actual title of the course is "Law and Legal System" and is numbered PLA 3013. The course could be considered an overview course. It cannot be titled "introduction" because that would require a lower level course number.
- ⁵ The Levels are taken from Pyle-Dziuban's Problem Solving Stages (adapted from the SOLO Taxonomy): A model for Critical Thinking in an Asynchronous Learning Environment Based on Case Briefing, Techniques, which can be found at <http://reach.ucf.edu/~aln/pyle>, a presentation originally made at the Asynchronous Learning Network annual conference in New York, November 1997. The stages of cognitive problem-solving were adapted from the SOLO (Structure of the Observed Learning Outcome) taxonomy developed by Biggs and Collis (1982). We added the labels used by Berliner (1988) for the stages novice through expert that he applied to teacher training.
- ⁶ Unfortunately, the minimal intellectual expectations of students is not restricted to introductory courses. Three-quarters or more of college professors use the lecture method. Milton (1982) used a faculty sample of 1700 at a research university and found only 17

- percent used essay tests and only 13 percent of the questions used by the respondents required problem solving.
- ⁷ Smith describes the conflict between lecturing and teaching critical thinking: "The amount of time spent listening is negatively related to change in critical thinking and positively related to memorizing" (Smith, 1983, p. 100).
 - ⁸ Sacks, 1997, argues that students actively counter attempts by faculty to depart from the lecture and testing model that they have learned so well.
 - ⁹ The statement of an abstraction may be memorized. Instructors who believe that the reiteration of an abstraction equals understanding it are deceiving themselves.
 - ¹⁰ Tests given to lecture and online students in different sections of the same course showed performance at equivalent levels on the same test (given in a classroom setting) (Dziuban, C. and Pyle, R. 1998). Item analysis, on the other hand, revealed significant differences.
 - ¹¹ A multiple-choice question in an introductory law course that requires memory alone would be: "The jury's fact-finding is called the a. declaration, b. judgment, c. verdict, d. precedent." One that calls for thought might be: "Which of the following is the most difficult to successfully challenge on appeal? a. instructions to the jury, b. admissibility of evidence, c. jury fact-finding, d. the trial judge's statements of law."
 - ¹² Case briefing is a method used by law school students and, in a modified form, by lawyers and others conducting legal research to reduce the complexity of judicial opinions to their essential components, simplifying the judge's task of reconciling facts and law. For thinking of primary legal sources, the essential elements of the brief are: Cause of Action, Facts, Issues, Ruling, Reasoning, and Analysis.
 - ¹³ This approach was the subject of a presentation to UCF faculty titled "Staging Classroom Dialogues: Web-Enhanced Critical Thinking", September 21, 1998. This approach was demonstrated through a Website that may be accessed at: <http://reach.ucf.edu/-pla4932/family/staging.html>.

REFERENCES

- Berliner, D. C. (1988). *The development of expertise in pedagogy*. New Orleans, LA: American Association of Colleges for Teacher Education.
- Biggs, J. B., & Collis, K. F. (1982). *Evaluating the quality of learning: The SOLO taxonomy (structure of the observed learning outcome)*. New York: Academic Press.
- Bird, G., & Sporakowski, M. (1998). *Taking sides: Clashing views on controversial issues in family and personal relationships* (3d ed.). Guilford, CT: Dushkin/McGraw-Hill.
- Dziuban, C., & Pyle, R. (1998). *Item analysis of differences between online and lecture sections of an introductory legal studies class*. Unpublished manuscript.
- Eble, K. (1968). *The craft of teaching*. San Francisco: Jossey-Bass.
- Gardiner, L. (1998). Why we must change: The research evidence. *Thought & Action*, 14(1), 71-88.
- Kohn, A. (1993). *Punished by rewards*. Boston: Houghton Mifflin.
- Langer, B. (1997). The World Wide Web as a research tool for students: Con. *Focus on Law Studies*, 13, 6-7.
- Leo, J. (1996). No books, please; we're students. *U.S. News & World Report*, 16, 24.
- Milton, O. (1982). *Will it be on the final?* Springfield, IL: Charles C. Thomas.
- Pyle, R. (1998). *Staging classroom dialogues: Web-enhanced critical thinking*. Retrieved September 12, 2001 from the World Wide Web: <http://reach.ucf.edu/-pla4932/family/staging.html>.
- Pyle, R., & Dziuban, C. (1997). *Problem solving stages (adapted from the SOLO Taxonomy): A model for critical thinking in an asynchronous learning environment based on case briefing, techniques*. Retrieved September 12, 2001 from the World Wide Web: <http://reach.ucf.edu/-aln/pyle>.
- Sacks, P. (1997). Higher education at the end of the millennium. *Thought & Action*, 13, 69-80.
- Smith, D. C. (1983). Instruction and outcomes in an undergraduate setting. In C. L. Ellner & C. P. Barnes (Eds.), *Studies of college teaching: Experimental results, theoretical interpretations, and new perspectives*. Lexington, MA: D. C. Heath.
- Spalding, A. (1998). *Taking sides: Clashing views on controversial issues in gender studies*. Guilford, CT: Dushkin/McGraw-Hill.
- Van Dusen, G. (1998). Education's magic bullet. *Thought & Action*, 14, 59-67.