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Using the Web to Deliver and Enhance Classes: Two Case Studies

By: Paul Q. Helford & Richard M. Lei

2

Using the Web to Deliver and Enhance Classes: Two Case Studies
Paul Q. Helford, Director Office for Teaching and Learning Effectiveness
Richard M. Lei, Associate Professor, School of Communication
Northern Arizona University, USA

Abstract

This paper discusses two case studies conducted at Northern Arizona University. The studies are from classes that are using the World Wide Web to enhance teaching and learning. One class is the Art of Cinema, a film studies class that has been taught via Instructional Television (ITV) for five years. Various techniques have been used over the years to increase class interaction. This paper will address a step by step procedure for effectively using the Web to enhance the learning environment in large enrollment courses like this one by increasing interaction between student and teacher and among students. The second class, Creative Advertising Strategies was developed as a fully web-based course in the summer and fall of 1997 and taught on the web, concurrently with a traditional classroom section, in Spring 1998. A pilot study was conducted to determine student satisfaction of web-based versus a traditional classroom environment and comparisons are made to each other. Results of the study, along with implications for future web-based courses, are provided in this paper.

Background

Northern Arizona University (NAU) is located in the mountain community of Flagstaff, Arizona (population 50,000) at an altitude of 7,000 feet (2,100 meters) and is about a ninety minute drive to one of the Seven Wonder of the World, the Grand Canyon.

NAU is the smallest of three universities in the state of Arizona with an on-campus enrollment of approximately 14,000. The University of Arizona in Tucson and Arizona State University in Phoenix are large research institutions located in major metropolitan areas. Each of these two universities has an enrollment in excess of 40,000. The Arizona state legislature and the three-university governing board have mandated that NAU deliver higher education programs and courses throughout this large, sparsely populated state, from the Mexican border in the south to the northern most point on the Navajo Native American Indian reservation.

For decades NAU's continuing education program either hired teachers at locations throughout the state or had teachers travel sometimes hundreds of kilometers from the Flagstaff campus to statewide sites. This proved to be both time consuming and limiting.

In the spring of 1990, the university offered its first live interactive television courses to 59 students in Yuma, Arizona, some 250 miles away near the Arizona/Mexican border. Instructional Television (ITV) grew fitfully at first, facing deep internal divisions. Through a series of programs, workshops, seminars, research projects, grants and evaluation tools, all of which were developed with input from the teaching faculty, ITV has become a university success story. Today NAUNet, a distance-learning telecommunications network connects more than twenty statewide classrooms for live, full audio and video ITV classes, as well as classes that are shown on cable TV. This year about 9,000 students have enrolled in over 160 ITV classes.

The Distance Learning Technology Mission

The NAU mission states that the university will "offer instruction… that employs a variety of strategies to support distance learning and provide opportunities for faculty (teacher)… development." And a stated NAU goal is "to be recognized as a national and international leader in the application of distance learning technologies."

NAU's accrediting agency, the North Central Association on Institutions of Higher Education (NCA) has published its Guidelines for Distance Education. The first of those guidelines is that distance education "programs provide for timely and appropriate interaction between students and faculty and

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among students."

Additionally NAU subscribes to the American Association of Higher Education's endorsed Seven Principles for Good Practice in Undergraduate Education. The first two principles are:

- Good practice encourages contact between students and faculty.
- Good practice develops reciprocity and cooperation among students.

In its centralized development of web-based courses, NAU has incorporated interactivity into the course design. ITV course development, on the other hand, is not centralized, so some ITV classes, like some traditional classes, are more interactive than others are. The highest enrollment classes at NAU are offered live on cable TV. Students who watch the classes live at home are generally reticent about calling in. Many students tape the classes and view at their convenience. In these classes there is little contact between students and faculty, and reciprocity and cooperation among students has been almost been non-existent.

This paper discusses two case studies conducted at Northern Arizona University. The studies are from classes that are using the World Wide Web to enhance teaching and learning. One class is the Art of Cinema, a film studies class that has been taught via Instructional Television (ITV) for five years. Various techniques have been used over the years to increase class interaction. This paper will address a step by step procedure for effectively using the Web to enhance the learning environment in large enrollment courses by increasing interaction between student and teacher and among students.

The second class, Creative Advertising Strategies was developed as a fully web-based course in the summer and fall of 1997 and taught on the web, concurrently with a traditional classroom section, in Spring 1998. The results of a study conducted three times during the semester, which asked students to rate their overall satisfaction/dissatisfaction with the course mode of delivery along with implications of this study, conclude this paper.

Class: The Art of Cinema

Approximately 25% of a student's academic career at NAU consists of general studies courses in the areas of arts, humanities, natural sciences, social sciences, language, analysis skills and world and cultural diversity. In the arts block a student can choose courses from the disciplines of music theory, theater and drama, literature and film studies. The Art of Cinema is an overview of the art, history, technique and business of film. Most students who take the course are juniors and seniors who have never studied film before.

The Art of Cinema has been a popular course for many years, offered in several large lecture sections, of about 150 each, every semester. Class size has influenced pedagogy which has been primarily lecture with many film clip examples. The class seemed a natural for ITV and since 1993 one section each semester has been offered on cable television with enrollments often reaching 300. Students are divided into two sections: a live studio section consisting of up to eighty students and a television section with hundreds enrolled. What little interactivity there had been in the lecture hall continues in the live smaller studio section but has been almost non existent among the home students.

Interaction

There were various attempts at interaction. In the lecture section there had been two exams and two papers each semester. A weekly writing component was added to the class, thus affording students an opportunity to interact with the material, if not each other. During one semester video coupon gift certificates were handed out to anyone who called in from home with a relevant question or comment. That worked for a few weeks, but the same people kept calling in.

One activity that did work and has been repeated each semester has been to give students specific questions to think about one week and then offer credit toward a grade for contributing during the live class period. Specifically, the students read the novel and watch the film version of "One Flew Over the

Cuckoo's Nest." The week before the class discussion, the students are given ten questions to consider. The resulting class discussion lasts nearly two hours with students calling in from home interacting with those in the studio classroom, and the instructor. Still this is only one class period, and the course does not lend itself to a weekly discussion.

Adding Technology

In spring of 1997 students in The Art of Cinema were required for the first time to submit all assignments electronically via E-mail. About half of them had used E-mail up to that time. They were given three weeks to establish an E-mail account. The instructor was much more lax about assignments being received on time, allowing both for technological problems and more importantly for students' fear and discomfort with technology. Faculty-student interaction increased so much that the instructor needed assistance and a separate account to handle the volume of E-mail. Enrollments fell in the class that semester for the first time.

In fall 1997 an asynchronous, text-based Virtual Conference Center (VCC) was added to the class. Now rather than individual E-mails to the instructor, the students were put into groups to write about the weekly lesson and movie with classmates. The first assignment was to introduce themselves to their group members. Another assignment was for each to find a cinema web site, share it with their group, evaluate the web sites and discuss criteria for evaluation. The most successful assignment was to set up virtual study groups for a midterm examination. The first week each group was given a study question to discuss. The second week, all the groups got together in the Virtual Conference Center to discuss their answers.

About ten percent of the total course points were for the weekly assignments. Almost all of the students did almost all of the assignments. The instructor needed even more assistance. Enrollment dropped again.

The enrollment in Fall 1998 was the lowest yet. The drop out rate was over 20%, ending with160 students. The students were again put into groups in the Virtual Conference Center, this time for a semester project, made up of seven assignments, accounting for over thirty percent of their grade.

The assignment was to do an in-depth study of one classic film by studying and writing about the movie individually and creating a group web site for the film. Assignments were due on a stated date but could be submitted in the VCC as late as 23:59 on the due date. Like most electronic communication, the Virtual Conference Center notes the time of submission.

There are a few keys to ensure student involvement in a virtual setting. First, credit toward their final grade must be given. Extra credit can be used, but that does not work as well. Flexibility on the instructor's part is necessary at this stage in students' technological savvy. Many students are still afraid of the technology, and the instructor may need to do some virtual hand holding to guide the students along. The student needs regular input from the instructor or from a qualified teaching assistant. For group work, a group leader must be identified.

The fall, 1998 Art of Cinema assignment schedule is included below and is easily adaptable to other academic disciplines. Note that the first assignment was E-mailed to the instructor, so that groups could be built using students' names.

Assignment number	Assignment Schedule
	Description
# 1	E-mail your top 3 movie choices and identify your skills and strengths from this list to help determine the contribution you can make to your group: knowledge of html coding, knowledge of movies, web user, research on the web, research in print, artistic, computer skills, computer software (identify PowerPoint, Director, Page Maker, etc.), writing ability, public speaking and presentation skills, other (be specific) You may also include names of people you wish to work with.
# 2	Find your name in the Virtual Conference Center. Each group is identified by a movie title. Your name should be within one of the movies from your list. Introduce yourself to your group. There will be specific items for you to discuss.
# 3	You should have watched your movie by now and begun research. Publish a home page for your web site. Note the film title and names of your group members. In the VCC, give your web page URL and request a presentation date.
#5	In VCC identify at least 8 links for your movie. Rank the links from best to worst and discuss your criteria for the ranking. Add at least four links to your web page. Add other information to your web page. Discuss themes and ideas that your will be exploring in your web site
#6	Complete your writing assignment and link it to your movie home page.
#7	Complete your web site and grade each person in your group.
#8	**In-class Web Presentations** are to be no more than 10 minutes long.

Be certain to allow enough time between each assignment both for the instructor and the student.

Class: Introduction to Advertising Course - ITV Example

Beginning in 1994, Introduction to Advertising has been taught via ITV on cable television every fall semester. This course is designed as an introductory level advertising class teaching vocabulary, concepts, and basic elements of advertising. Most students enrolled in the class are either freshmen or sophomores. Utilization of television allows large enrollments of approximately 170 per semester.

Students are divided into two sections: a studio section consisting of 18 individuals, and a television section where the remaining +/- 150 students watch the class via television on and off campus, live or on video tape. The studio students provide a "live audience" component in that they ask questions, are encouraged to participate, and provide an important feedback loop for the instructor. Students who view the course via television are encouraged to call in with questions. Those students who do call become

part of the audio component of the class, and their questions are answered while the class is being broadcast live.

Student exam scores for both sections are essentially equal and student evaluations of the class are uniformly positive. The television model has been successful in exposing students to non-traditional teaching environments without sacrificing quality or student learning outcomes.

Class: Creative Advertising Strategies - Web Based Delivery & Pilot Study

In the spring of 1998, another advertising course was developed for a different non-traditional teaching environment. Creative Advertising Strategies is a junior level course taken by advertising and marketing promotion majors. The course focuses on the marketing concepts utilized in advertising campaigns, and requires the students to work in teams to develop a prototype campaign as well as complete two examinations and read a textbook. This same course was also taught as a traditional class, and the lectures were video streamed allowing web-based students the opportunity to see lectures.

In order to assess strengths and weaknesses and assess learning outcomes, a pilot research study was conducted. The two sections of the course (one web-based, the other traditional classroom) were administered questionnaires at roughly four week intervals throughout the semester. A total of 17 questions were developed, which roughly translated to the

evaluation of overall student satisfaction with the course and its delivery mode.

Five broad conclusions were suggested by this research:

- Students in both the web and lecture sections reported greater overall satisfaction as the course progressed throughout the semester.
- Throughout the semester, the lecture section reported greater overall satisfaction with the class than the web section at all reporting intervals.
- The greatest strength reported by students in the lecture section was "faculty and student interaction" while web students reported "convenience."
- The greatest weakness reported by students in the lecture section was "inconvenient time/location." Web-based students reported "lack of faculty and student interaction" as the greatest weakness. This was the opposite of the strengths noted by each section.
- Consistent with lower overall satisfaction in the web class, students performed 4% -10% below the lecture in their mid-term and final exam scores.

Working on team projects proved to be the greatest challenge for this web-delivered class. Despite use of a variety of electronic means, students believed that their lack of face-to-face contact was difficult to overcome. Most often, they developed their own means to facilitate communication, and appeared to default to whichever communication means were easiest, E-mail, virtual conferencing, telephoning, or face-to-face contact.

Implications for Web Course Development

This pilot study suggested five key implications for those developing web-based courses in the future:

- In that convenience is perceived as a major advantage of a web class, faculty should provide means (e.g. E-mail, virtual conferencing, etc.) to ensure adequate faculty-student interaction. Students can become overwhelmed and feel isolated because they do not have regular person-to-person contact with each other.
- Students will likely perform below those who enroll in a traditional course. Additional review materials or segmenting material into relatively short "learning modules" help break up content into smaller, testable units.
- Group/team projects pose scheduling and implementation challenges. In classes where group activities are utilized, virtual conferencing should be implemented.
- Students should be required to demonstrate that they have adequate computer skills and access to

appropriate equipment before registering for a web-based class.
- Blending of technologies is suggested, For example, supplement web materials with an audio track of the instructor giving a truncated lecture could better simulate a classroom environment.

Web-based delivery offers institutions a means to extend their geographic service area, and to serve a student population who would otherwise not have the opportunity to take university classes. As improvements in pedagogy are implemented, student satisfaction and performance will be maximized.

8