

Off-Campus Instructor Successfully Teaches Course With Two-Way System

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Abstract

Adaptation of an agricultural marketing course for simultaneous delivery to multiple locations is analyzed. Teaching via two-way telecommunication necessitated adjustments in the standard teaching model. Methods adaptations subsequent to initial course offering emphasized visual variety in presentation. Second session outcomes included improvements in student perceptions and instructor satisfaction concerning the course.

Universities have responded to the needs of place bound students by extending classrooms beyond the bounds of a single campus. Multi-campus universities use audio-visual communication systems linking distant classrooms to simultaneously offer courses taught by one instructor. These systems are increasingly used to extend main campus course offerings to branch locations while maintaining limited numbers of resident faculty at branch locations. However, the development of successful teaching programs at branch campus locations requires at least a minimal number of resident faculty to coordinate programs and advise students.

In selected situations agricultural college faculty with appointments split between teaching and research or extension are assigned to branch campus locations. Close working relationships with industry, research and extension clientele are fostered by such assignments. For some of these faculty, teaching assignments necessitate the use of a two-way telecommunication system in reverse of the traditional direction. Branch campus instructors then must reach back to classes largely comprised of students in residence on the main campus. This in contrast to the more common situation where central campus faculty use a television system to deliver instruction to distant classrooms.

In one such case in the state of Washington, an agricultural economics faculty member with teaching and extension assignments is housed at a branch location and has taught an introductory agricultural marketing course during two successive years. The branch campus's undergraduate agricultural program is under development and offers a dearth of potential students for enrollment in such an agricultural economics course. This has resulted in having only

one student enrolled in the course at the branch campus during each semester. The balance of the class (40 -50 students) were in residence on the main campus during both years.

The purpose of this article is to use a case study to describe and evaluate the challenges and adaptations encountered by a branch campus instructor in teaching a main campus class from a branch location. Arrangements such as this may become more common among academic departments within colleges of agriculture. This trend could be fostered by a growing demand for agricultural courses by place bound students. Faculty at branch locations may also be called upon to carry more of the teaching load for main campus classes. Budgetary limitations currently imposed on the nation's agricultural colleges could proliferate course offerings in multiple locations without recruiting additional faculty.

The objectives of this paper are to:

1. Present an overview of the telecommunication system and the course used as a basis for the case study.
2. Describe the initial year's teaching model in the telecourse and summarize the outcomes and problems encountered.
3. Detail the teaching model adjustments made in light of the initial year's experience.
4. Evaluate the outcomes during the second year of teaching the course and draw implications for long distance teaching.

The Teaching Situation

The Washington Higher Education Telecommunications System (WHETS) is a fully interactive, two-way audio and video communication system. Three branch campus locations are linked to the Pullman main campus via a network of microwave antennas. The branch locations are equipped to originate and transmit instruction as well as receive instruction originating from the Pullman campus. The system's two way video and audio permits students in up to four separate locations to comprise the total class through interaction over the electronic network.

Television cameras, monitors and automatically activated microphones in the electronic classrooms enable the instructor and all the students to instantaneously see and hear one another, regardless of location. The instructor and

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class members at the originating location observe and interact with students at the off site locations via video monitors. Students converse with the instructor from all locations through individual microphones at each seating position and observe the instructor and distant students on television monitors.

Description of the Course

Agricultural Economics 350 is an introductory course in marketing economics in agriculture and related industries. Functions and institutions associated with transforming raw farm products into foods ready for consumption are studied at length. The course is designed to provide a foundation upon which students can build further, advanced studies in marketing and applied economics related to agriculture. The course enrollment is primarily junior and senior level agriculture students majoring in various disciplines and programs.

The Adaptive Teaching Process Model

The process of adjusting a teaching structure to a new environment is depicted in Figure 1. Generally, all courses evolve over time through a process of experimentation, evaluation and adjustment. The present case involves two models (semesters) of teaching and evaluation separated by a major tactical adjustment of the teaching model. Both methods and results for each model and the adjustment techniques are discussed sequentially in the balance of the paper.

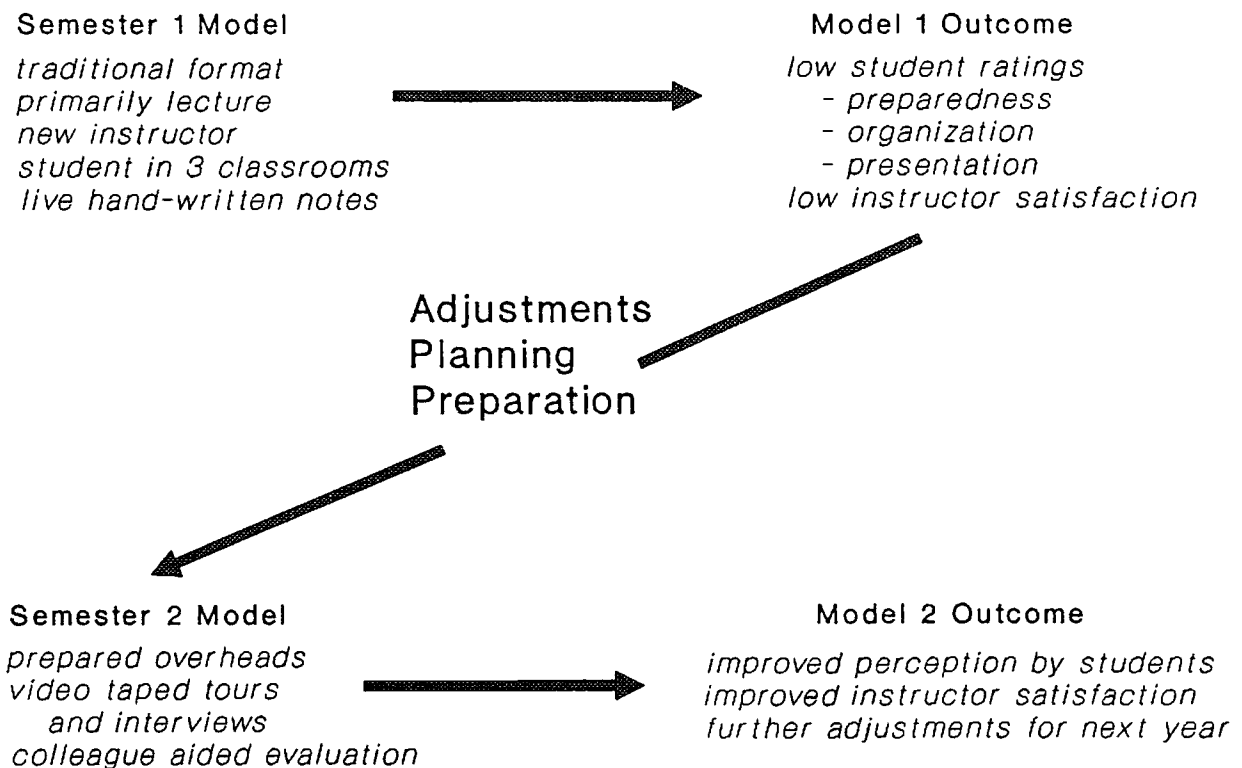
Year One Model

The course was first taught over the WHETS system during Fall semester, 1990 with an enrollment of forty six students. This was the first time an agricultural economics class had been taught using the WHETS system in the state. The course was taught by a new faculty member with limited previous teaching experience. The two campuses offering the class are 140 miles apart and the class met twice weekly.

The instructor taught from the branch location via the live telecommunication linkup with the Pullman campus one class day per week and travelled to the main campus for the second class session. Rotating the origination of the class between locations provided opportunity for the traditional instructor-student contact at least one day per week and provided time to offer office hours on the main campus. Unfortunately, due to limited seating of about 30 students in each of the WHETS classrooms assigned in Pullman, about half the students had to view the class from an adjacent classroom, even when the instructor was in Pullman. One student from a nearby community college was the only class member at the branch location.

During this initial semester the course was taught using techniques similar to those used in previous offerings of the course. A lecture with opportunity for open discussion format was employed throughout the course although the straight lecture format prevailed at most times. As each class session proceeded, the over head camera was used to

Figure 1. Case Study: Teaching model adjustment process.



display hand lettered lists and outlines of important points in lieu of a standard chalkboard.

Classroom participation by students was extremely limited throughout the semester. Students seemed to have great difficulty in overcoming the inhibition inherent in using the microphones in front of them. Seeing themselves appear on the monitor at the front of the class when speaking was perhaps responsible for their reluctance to participate. Finally at the end of the semester, the instructor attempted to stimulate student participation by assigning the students to panels and requiring each to spend about five minutes on camera presenting course material to the class. This process, while helping reluctant students to overcome barriers to communicating over the medium, proved less than satisfactory for further use in an undergraduate course.

Model One Results

As measured by student evaluations and instructor satisfaction, the first year results were unsatisfactory. The course evaluations were especially critical of the preparation, organization and presentation aspects of the course. These perceptions were abundant in spite of the instructor's best efforts to avoid uncertainty and confusion about the course material.

Students were also unimpressed with the idea of the panel presentations employed at the end of the semester. They expressed concern that they were called upon to present material during the last five class sessions. The relevance of the experience did not seem to register with them as anything of educational value. They failed to find value in enhancing their verbal abilities by making a short presentation over the television medium.

Three areas in need of improvement were highlighted for adjustment by evaluation of semester one: the need to provide more organization; avoid live, on screen writing of notes and outlines; and the need to employ a variety of visual presentation methods.

Model Adaptations Implemented During Semester Two

Preamble

Two basic changes were made in the configuration of the course during the second offering. First, a WHETS classroom that could accommodate all students enrolled in the course was scheduled for use on the main campus. This overcame the problem of students viewing from a second room even when the instructor taught from the main campus. Secondly, a teaching assistant was assigned to the course to provide a readily available contact person for students on the main campus. The second session had an enrollment of 41 students on the main campus and one student at the branch location. The rotating schedule of originating instruction between locations was retained from the first semester model.

Effective use of the telecommunications system demands high levels of advanced planning for every class session. A definite plan is needed to enable the students to overcome their natural apprehension of class participation while cameras are rolling. Early use of informal introduc-

tions and background exchanges over the system were used in the second model to help alleviate some of this inhibition during the first class meeting. This was accomplished by having the students fill out a short informational form listing their hometown, agricultural background, WHETS experience and major. This information was used as a basis for informal instructor dialogue with each student during the latter portion of the session.

Outline and Visual Preparation

One feature of the WHETS system is an overhead camera aimed at the surface of the teacher's console. This camera and a pad of colored paper are used to replace the conventional blackboard. The camera zooms in and out on the pad to display outlines, equations and other visual material on the monitors in all locations as if the instructor were writing on a chalkboard. The camera further permits use of prepared overheads of charts, graphs, pictures, and other visuals to be monitored by students at all locations.

Prior to every class session an outline of all material to be presented was prepared. The outlines, used as detailed overheads, were far superior to live, hand-written outlines used during the first session. The hand-written notes and bullet lists presented during session one were perceived as ill organized and lacking readability when projected by the television monitors. These newly prepared overheads added to the visual variety of the class and aided the students in organizing their note writing. The system operators split the screen in a variety of ways to simultaneously display the instructor and the prepared overhead materials.

Pre-taped Interviews and Plant Tours

Videotape increases versatility of the course, and although video tape may be used in conventional classrooms, it is easily and always available to an instructor using the WHETS system. Field trips and guest lecturers may be video taped for use at appropriate times of the course without the planning and time consuming hosting associated with guest lecturer visits to campus classrooms. The telecommunications medium is made for video tape and the more that is incorporated the more variety and lively the class is made (Hanley, D.J. "Strategies for Teaching and Learning." Preconference Journal, Central Washington University, April, 1991).

It was decided to inject more visual variety into the course by videotaping interviews with managers of agricultural marketing firms prior to the start of the second session. One interview focused on the adoption of new "wand sorting" technology in the apple packing industry. This tape allowed all the students to witness the equipment in operation and have it explained by those using it, without traveling to the plant location for personal viewing. In another instance, a manager of a large fruit packing and processing firm spent an entire day providing interviews and plant tours for the instructor and the cameraman for later use in the class. The interviews were centered around important concepts presented in the course. This enabled the students to "meet the manager" and witness him discussing the practical implications of food marketing. This material intensified the interest of the students and enabled them to

visualize marketing concepts in real world situations.

A side benefit of pretaped firm visits, but a very important one for industry managers, is that they are not hosting entire classes of 40 to 50 students for plant visits. Students view the operation without taking time away from other classes which is often necessary for actual field trips.

Educational video tapes are available from many sources and were found suitable for classroom use. Universities maintain extensive collections of videos for use as supportive class material. Additionally, numerous trade and commodity organizations have prepared tapes which may be selected for use in the class.

A major effort was required to edit both personally filmed tapes and the prepared tapes prior to the class. Time constraints seldom permitted the use of more than 10 to 15 minutes for viewing these tapes during the 75 minute periods. The long interviews were necessarily edited and appropriate topics selected for use during individual class sessions as the semester progressed.

For example, a fifteen minute segment of video was selected for use during a class session introducing the form changing nature of processing. The two top managers for the fresh and processed divisions of the firm jointly explained the differences in marketing fresh versus processed fruit products. The students learned first hand that the marketing task is vastly different for fresh and processed foods due to industry structure and timeliness of sales. In another class session on international trade, a segment of video film from the same firm was selected to provide practical insight. The students learned the importance of patiently cultivating alliances and trust with foreign marketing partners as a prerequisite to building international sales.

Colleague Aided Evaluation

This evaluative technique of teaching was employed following the first one third of the course. This permitted feedback to the instructor concerning the perceptions of the class members to date, allowing appropriate adjustments to be undertaken. The procedure involves having a department colleague visit the class unannounced. The instructor leaves the class and the colleague seeks input from the students about any and all concerns. If the instructor chooses, the colleague can be provided with a list of issues of interest ahead of time. This technique proved especially valuable in the television class due to the newness of the experience for most of the students and the instructor.

Guest Lectures

Guest speakers may make live presentations to the class from any of the locations offering the course. This allows flexibility in scheduling guest speakers and reduces travel

Table 1: Composite Ratings from Student Evaluations of Agricultural Economics 350 for Fall Semester, 1990 and 1991.

	1990 (rating on a scale of 0-4)	1991	change (percent)
Instructor preparation	2.27	3.10	+36
Course organization	2.25	2.75	+22
Presentation	1.79	2.28	+27
Overall course	2.10	2.51	+20
Overall instructor	2.21	2.47	+12

time. A technique which proved successful as part of the second teaching model was to have the guest lecturer in one location while the regular instructor exchanged questions and comments from another location. This tended to stimulate student interest in the discussion and elicit comments and questions from them.

Perceived Results of Adaptations

A comparison of relevant ratings from student course evaluations for the two semesters is made in Table 1. It is commonly understood that these evaluations are not complete measures of course quality and teaching effectiveness. However, these are the only objective measures available to gauge student perceptions of the two teaching models.

The measures pertaining to preparation, organization, and presentation all increased under model two methods. Instructor preparation and course organization improvements are most probably attributed to the preparation of graphic overheads for each session. Student comments indicate the use of graphic overheads as a sign of instructor preparedness and lecture organization under model two whereas the use of live outline writing was considered unpreparedness in session one. Video taped segments were cited by students as a good way to break up the long class periods into segments with varying presentations.

Summary and Conclusions

This article provides an overview of two year's worth of teaching experience using television links to teach from distant locations. The case study presents a long distance learning curve for the instructor. The importance of advanced planning is heightened by the use of cameras and monitors which tend to magnify flaws in hand written notes. The medium's greatest asset is its visual versatility and this feature should be used to inject as much variety of presentation as possible. Videotaped interviews and industry tours along with guest speakers allow for variety in the presentations. It is a challenging system that is likely to see increased use at multi campus universities in the future. [12]



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