

Interactive Television Instruction In Horse Management

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Abstract

Instructional methods developed for interactive television allows instruction in basic horse management at off-campus locations. Evaluation of the TV-microwave system for delivery of the horse management course reveals many advantages and disadvantages. Unique approaches to laboratory assignments were developed to replace supervised "hands on" experience. Student evaluations and the similarity in the final grades between on-campus and off-campus students suggested that the use of interactive television was an effective teaching method for horse management.

Introduction

Washington State University celebrates its centennial anniversary in 1989 and begins its second century of service to the people of Washington. Assessment of the land grant university mission to take education to the people has resulted in development of branch campuses at Vancouver, Tri Cities and Spokane and the Washington Higher Education Telecommunication System (WHETS). Interactive television allows delivery of basic horse management courses by a cross-state microwave system to branch locations from 75 to 300 miles from the Washington State University (WSU) campus. This report describes teaching techniques, methods and administration associated with a horse management course via interactive television.

Methods

Microwave technology is used in a fully interactive system with two-way video and audio. Through the use of television cameras, monitors and automatically activated microphones in an electronic classroom on-campus and at the off-campus sites the instructor sees and hears the students who also see and hear the instructor. This interactivity approximates a normal classroom setting for off-campus students (Peters and Oaks, 1988).

Classrooms are designed so that students sit at tables with microphones while the instructor sits or stands at the teaching console. The console houses the line monitor which displays what is currently on the air. To the left and right of the line monitor are three monitors that display either films, slides, the character generator and whatever is being filmed by the overhead camera. Five other monitors are strategically placed in the classroom. Two 25" monitors are in opposite corners at the front of the class for the student's viewing while three monitors are positioned at the back of

the class that provide views of the remote students.

Four color television cameras are also located in the electronic classroom. Two cameras in the back of the room follow the instructor while another camera provides images of students to other off-campus sites. An overhead camera covers what the instructor has on the desktop. All cameras are operated remotely from a nearby control room.

Course Description

The course "Horses and Horsemanship" provides an overview of the principles of horse management. It is designed to provide participants with information for making sound decisions about issues in practical horse management. The class was advertised in Washington horse publications, through an Extension Equine Newsletter and by contact with Extension agents.

The class was taught in a three-hour block one night a week to accommodate students at WSU branch campuses. Both on and off-campus students attended the lecture during the first two hours. The last hour of the block was reserved for laboratory for off-campus students. Laboratories for on-campus students were regularly scheduled and supervised. Management techniques were demonstrated using university facilities and horses. Off-campus students view video tapes produced during regular laboratory sessions or tapes purchased from commercial sources. Use of laboratory specimens is enhanced by the ability to use close-up photography and to incorporate in special segments. For example, in a breeding soundness exam for a stallion, a special microscope with video capability can be used to demonstrate sperm cell mobility or abnormalities.

The video demonstrations illustrate basic principles and further laboratory work was accomplished by outside assignments, which were required of all students. On-campus students completed assignments during the regularly scheduled laboratory. Off-campus students completed assignments by use of their own horses or those of classmates. The assignments were not what would typically be thought of as "hands-on". Students were asked to evaluate horses or management situations. Despite the obvious limitations of lack of supervised "hands-on" experience, learning was facilitated by the fact that the assignment was directly relevant to the experience and interest of the students (Mollett and Leslie, 1986).

Each assignment had specific learning objectives. A written report was completed for each laboratory that indicated that the learning objective was met and a specific competency was demonstrated.

Examples of assignments include: evaluation of conformation, establishing feeding programs for particular horses,

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Table 1. Profiles for On and Off-Campus Students Enrolled in Horse Management.

	Average Age	Years of Horse Experience	Years of College Experience	Years of Formal Horse Instruction	No. Horse Organizations	Grade
Off-Campus	38.2* +/-10.6	3.9* +/-1.7	2.5* +/-2.0	0.50* +/--.51	1.4* +/-1.6	77.2* +/-22.0
On-Campus	22.2* +/-6.0	3.1* +/-2.1	2.9* +/-1.4	0.45* +/--.51	0.7* +/-0.6	83.8* +/-7.3

a, b Means in same columns with different superscript letters differ (P<.01).

and evaluation of stable management. Case studies involving insurance claims related to farm management were also utilized. These types of learning experiences have been reported to be very effective (Topliff, 1989).

It was beneficial to travel, early in the course, to each branch campus location. Lectures originated from electronic classrooms at the various sites. This established a rapport with the students and personalized the television teaching.

A field trip was planned in conjunction with the early visit. A demonstration of some of the principles discussed in class supported the instructor's credibility as a practical and knowledgeable horseman, thus improving the effectiveness of the instruction.

A farm tour at the end of the course brought all the students together and illustrated many of the principles discussed in the course. The farm visits were very effective. Owners and breeders were interested in showing their horses to local students and they felt that improving the management skills of local horse enthusiasts would lead to increased horse activities in the area.

Visualization is an integral part of successful television instruction. The electronic classroom offers excellent visualization techniques for teaching. Take videotape, it is the most logical method for presenting highly visual instructional materials in the interactive television system. The overhead camera takes the place of a blackboard and overhead projector. The close-up capability of the overhead camera adds to the effectiveness of the use of models and laboratory demonstrations. The television cameras allow students to see on the monitors what would normally require close personal observation. Character generators and computer terminals can add vivid text making the system a very effective visual medium for teaching.

A daily courier service provided timely transfer of homework and handouts between students and instructors. Facsimile was used for last minute distribution of course materials. Branch campus proctors administered exams and provided student liaison. An 800 telephone number provided off-campus students with easy access to the professor.

Results and Discussion

Students learned about the class through several media; not a single medium could be identified that would reach every student. All off-campus students were required to secure permission of the instructor to enroll. The prerequisites for enrollment were; 1) significant experience with horses or formal training in one or more of the following areas: stable management, breeding farm management, conditioning, training or showing. 2) a knowledge of biological sciences that would enable students to understand the scientific and practical aspects of horse production.

Qualifications of prospective students were determined

by a standardized questionnaire which was completed in a telephone interview. Thirty students were interviewed and twenty were admitted and registered for the class at the three off-campus sites. Twenty-five students were admitted to the on-campus class. The course fees for the 3 semester credits were the same for on campus and off campus students.

The average age of the off-campus students was 38.2 years with students ranging from 19 to 60 years of age (Table 1). On-campus students averaged 22.2 years of age. Profiles of off-campus students are similar to those reported by Wagner (1987). Off-campus students had an average of 3.9 years of horse experience. The actual number of years of horse experience may have been higher but the survey was designed to determine only if they had 1, 2, 3, 4, or 5 or more years of horse experience. Students on-campus had 3.1 years of horse experience. There were no statistical differences in the years of horse experience, years of college, or years of formal horse instruction between on and off-campus students (Table 1). The types of horse organizations the on-campus and off-campus students belonged to differed but the number did not.

Grades were calculated on the basis of 100 points. The average grades of on-campus (83.8) and off-campus students (77.2) were not statistically different (Table 1). Instructors at the University of Arizona reported no differences in the grades of students enrolled in interactive television courses (Wagner, 1987). There was a great deal of variability in the grades of off-campus students (SD = 22.9). This was due mostly to the performance of one individual that scored very low on the tests and assignments. This individual had little horse experience or interest and appeared to be taking the class mostly because of the novelty of the system.

Correlations between student profiles and performance were different for the on and off-campus students (Table 2 and Table 3). Highest correlations for off-campus students were between grade and years of experience (R = .51, P <

Table 2. Correlation Coefficients and Probabilities for Off-Campus Students.

	Age ^a	Yr Exp ^b	Yr Col ^c	Frm Trn ^d	Org ^e
Years Experience	-0.23 0.35				
Years College	0.05 0.84	-0.26 0.29			
Formal Training	0.25 0.32	0.39 0.11	-0.18 0.46		
Organizations	0.12 0.62	0.42 0.08	0.06 0.81	0.07 0.77	
Course Grade	-0.28 0.26	0.51 0.03	0.03 0.92	0.00 0.99	0.35 0.15

a - Average age; b - Years of horse experience; c - Years of college experience; d - Years of formal horse instruction; e - Number of horse organizations.

Table 3. Correlation Coefficients and Probabilities for On-Campus Students.

	Age ^a	Yr Exp ^b	Yr Col ^c	Form Tr ^d	Org ^e
Years Experience	-0.16 0.49				
Years College	0.37 0.10	-0.03 0.90			
Formal Training	-0.35 0.13	0.79 0.00	-0.00 0.98		
Organizations	-0.18 0.44	0.70 0.00	0.19 0.43	0.74 0.00	
Course Grade	0.18 0.45	0.41 0.07	0.31 0.18	0.33 0.15	0.10 0.41

a - Average age; b - Years of horse experience; c - Years of college experience; d - Years of formal horse instruction; e - Number of horse organizations.

.03). Correlations for on-campus students indicated that formal training by riding instructors or others was highly correlated with grades ($R = .79, P < .0001$). There were also high correlations between the number of horse organizations students belonged to and grades ($R = .70, P < .0006$). Correlations between years of horse experience and grades was not high for on-campus students ($R = .41, P < .07$). This is in agreement with the report of Lawrence (1987).

Based on evaluation of grades it appears that off-campus students had educational opportunities similar to the on-campus students. Evaluations indicated 93% of the students would recommend the class to other students. The Arizona State report indicated at least 89% of their television students would recommend courses taught via this system to other students. However, there were some concerns expressed. Several of the off-campus students commented about a desire for more "hands on" experience although there were many positive comments about the way the laboratories were handled. The absence of supervised "hands on" experience may be an instructional limitation of this system. Some on-campus students expressed concerns similar to those in the following quote: "It was a little inconvenient at times with the microwave system but I think this was a good idea and it helps off-campus people learn important information about horses."

One of the real teaching challenges is to personalize the system for the off-campus students. Evaluation of the Arizona system indicated that students think the system works best for lecture and question and answer formats. Students indicate that classroom discussion is difficult over the interactive system. These limitations may be overcome by continuous efforts to create the opportunities for interaction during class. Also, time must be set aside for conferences with off-campus students over the television to answer questions that require visual response and cannot be answered through telephone conference.

Conclusion

The use of interactive television has many advantages that make the system an effective teaching activity. The system provides the opportunity to reach potential new students, it is an effective addition to transfer programs, two year programs are enhanced and members of the horse

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industry have the opportunity to update their management skills. In conclusion, the use of interactive television appears to be an effective delivery method for basic horse management information to off-campus locations.

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