

**Attributes and Attitudes of Students Enrolled in Agriculture Off-Campus Videotaped Courses**

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In 1979, an off-campus Master of Agriculture degree was approved and offered through the Professional Agriculture Curriculum at Iowa State University. An off-campus Bachelor of Science degree was approved and offered in 1991. The primary objective of the off-campus degree programs is to make quality post-secondary agricultural education available to individuals who are unable or prefer not to study on campus.

Videotaped courses have been offered through the professional agriculture curriculum since the middle 1980's. Videotapes are mailed directly to students. On-campus sessions, usually held on Saturdays, are scheduled in conjunction with the videotaped lectures for laboratory activities, group discussion, and testing. Normally, one 6-hour, on-campus session is held for every semester credit awarded. Also, students may access the instructor by a toll-free telephone number.

Videotaped courses have become the primary delivery system for the Iowa State University College of Agriculture distance education programs because of their low cost and convenience to students. According to Mark Honeyman, Coordinator of Off-Campus Programs for the College of Agriculture, the use of videotaped instruction is expected to increase.

The Iowa State University College of Agriculture off-campus degree programs meet the four essential elements of a distance education program proposed by Keegan (Wilson, 1991). Keegan's elements included: (1) the separation of teacher and student during most of the instructional process, (2) the influence of an educational organization and the provision of student evaluation, (3) the use of educational media to carry course content, and (4) the provision for two-way communication.

What is known about the characteristics of distance learners? Wilson (1991) summarized literature that described distance learners as being older (20-24 years of age), professional, and more often female. Wilson noted that adults choose distance education to avoid work and leisure conflicts, to minimize travel, and for various social, economic, and geographical reasons. Lehtola and Boyd (1992) described distance learners in an agricultural safety videotaped course as self motivated and self disciplined. Gulliver and Wright (1989) found that distance learners do not place a high value on communicating with other students.

Gulliver and Wright (1989) identified three factors (access, receptivity, and desirability) that were central to understanding a student's orientation toward technology-mediated learning options. They reported that students were receptive of videotape and listed a number of desirability indicators including: flexibility, self-pacing, costs, reduced need to travel, ability to review materials, and course content that may not be readily available elsewhere.

Distance education has a number of advantages, according to Clark and Verduin (1989). It enables new audiences to enter higher education and has the potential to produce a significant number of graduates. High quality learning material is possible. Cost-benefit analyses favor distance education because participants can continue to contribute to the economy. The degrees of distance learners are gaining acceptance.

Newcomb (1990) observed that distance education was developing rapidly as a tool for meeting unmet educational needs. Newcomb went on to say that "as distance education rapidly evolves, a whole host of research questions are emerging. Agricultural educators need to lead the research efforts which will be required in this area" (p. 6).

Currently, a need exists to determine the characteristics of students enrolled in agricultural distance education programs, their motivations for enrolling, and their attitudes toward the program. Research of this type will aid agricultural educators in designing and conducting distance education programs in a manner consistent with the needs of students.

### **Purpose and Objectives**

The purpose of this descriptive study was to develop a profile of students who enroll in videotaped credit courses offered by the Iowa State University College of Agriculture. The study further sought to determine student attitudes toward videotaped instruction. The objectives of the study were to:

Describe demographic characteristics of students enrolled in the Iowa State University College of Agriculture off-campus videotaped courses during Fall Semester, 1992.

Describe attitudes of students toward the use of videotape as a tool for delivering agricultural courses.

### **Procedures**

#### **Population and Sample**

The population for the study consisted only of active students who enrolled in off-campus videotaped courses offered by the College of Agriculture at Iowa State University (N=200). Any student who enrolled in at least one videotaped course during 1992 was considered active. The accessible population consisted of students enrolled in two distinct videotaped courses for the fall semester of 1992. Seventy-eight students were enrolled during fall semester, and all were included in the sample.

#### **Instrumentation**

The instruments utilized in the study were developed by the researchers. Content and face validity for the questionnaire were established by a panel of faculty in the Iowa State University Agricultural Education and Studies Department.

The attitudinal instrument consisted of 13 Likert-type items with five response categories, ranging from strongly disagree to strongly agree. Cronbach's alpha was used to assess the internal consistency of the attitudinal instrument. The resulting Cronbach's alpha was .83.

#### Data Collection

Data for the study were collected by mailed questionnaire. The questionnaire, along with a cover letter and a stamped return envelope, was sent to all students (n=78) enrolled in an off-campus videotaped course during the Fall Semester of 1992. Approximately three weeks after the initial package was mailed, telephone calls were made to all nonrespondents, encouraging them to complete the questionnaire and return it in the envelope provided. Approximately one week after the first follow-up, a second telephone follow-up of nonrespondents was completed. After each follow-up, additional questionnaires were sent to all students who had lost or discarded the original questionnaire. Sixty-one students completed and returned the questionnaire, for a response rate of 78 percent. Since students participating in the study were not a probability sample of active students who enrolled in off-campus videotaped courses, results can not be generalized to the population.

#### Data Analysis

All data were analyzed with the SPSS/PC+ personal computer program. Appropriate statistics for description were used, including frequencies, percents, means, and standard deviations.

### **Results**

Of the students completing the questionnaire, 86.9 percent (53) were male. Approximately 62 percent (37) of the students were enrolled for graduate credit. The remaining students were enrolled for undergraduate credit. The respondents had completed an average of 3.85 videotaped courses, with a standard deviation of 3.52.

Students enrolled in videotaped courses ranged from 21 to 58 years of age. A majority (51.6%) of the students were between 31 and 40 years of age. The fewest number (5%) of students were 51 years of age or older. The average age of video-course students was 35.7 years, with a standard deviation of 7.83 (Table 1.)

Table 1. Student Age.

Age Group	N	%
21-30	16	26.7
31-40	31	51.6
41-50	10	16.7
51-60	3	5.0

Mean = 35.7, Sd. Dev. = 7.83.

The most frequently cited primary occupation of the students was farming (42.6%), followed by agribusiness (19.7%), soil conservation (8.2%), agriculture extension (4.9%), and agricultural education (4.9%) (Table 2.) Sixteen percent of the students were employed in other occupations such as certified public accounting, departments of natural resources, farm insurance underwriter, museum manager, machinist, and special education teacher.

Table 2. Primary Occupation of Students

Occupation	N	%
Farming	26	42.6
Agribusiness	12	19.7
Soil Conservation Service	5	8.2
Agriculture Extension	3	4.9
Agricultural Education	3	4.9
Other	10	16.4
Unemployed	1	1.6

Students were asked to indicate their highest level of educational attainment. The majority (63.4%) of students held a bachelor's degree. Additionally, 6.6 percent (4) of the students had a master's degree. Of the remaining students, 13.1 percent (8) had an associate's degree, and 14.8 percent (9) had a high school diploma (Table 3).

Table 3. Highest Level of Educational Attainment

Level	N	%
High School Diploma	9	14.8
Associate's Degree	8	13.1
Bachelor's Degree	40	65.6
Master's Degree	4	6.6

Students were asked what motivated them to enroll in a videotaped course. Specifically, students were asked to rank the following motives: personal development, career advancement, and pursuing a degree. Students ranked pursuing a degree highest, followed by personal development and career advancement (Table 4).

Table 4. Mean Rankings and Standard Deviations for Factors Motivating Students to Enroll in Videotaped Courses

Item	Mean	SD
Pursuing a degree	1.82	.93
Personal development	1.90	.90
Career advancement	2.53	.87

Students' attitudes toward the use of videotape as a tool for delivering agricultural courses were measured with a five-point, Likert-type scale. On average, 21 percent (13) of the students had attitude scores ranging from 4.51 to 5.00. An additional 64 percent (39) provided scores ranging from 3.51 to 4.50. Approximately 13 percent (8) of the students provided mean attitude scores ranging from 2.51 to 3.50, and only one (1.6%) student had a mean attitude score less than 2.50 (Table 5).

**Table 5. Mean Scores for Student Attitudes Toward Videotaped Instruction**

Mean	N	SD
2.01-2.50	1	1.6
2.51-3.00	2	3.3
3.01-3.50	6	9.9
3.51-4.00	17	27.8
4.01-4.50	22	36.1
4.51-5.00	13	21.3

Mean = 4.06; SD = .54.

To facilitate greater understanding of student attitudes toward videotaped instruction, means and standard deviations for individual items are presented in Table 6. On average, students provided mean scores greater than 4.50 for items related to convenience, opportunity for learning, and whether they would enroll in additional videotaped courses. Students provided mean scores less than 3.50 and were more variable in their response to items related to feelings of isolation, and to preference of video over traditional classroom instruction.

**Table 6. Means and Standard Deviations for Individual Items on the Attitude Scale**

Item	Mean	SD
Learning through videotaped instruction is convenient	4.69	.50
Videotape provides me with learning opportunities that I otherwise would not have	4.69	.59
I would enroll in another videotaped course	4.56	.59
Videotape allows me to control the pace of my learning	4.48	.87
I would recommend videotaped courses to my friends	4.39	.71
Videotape should be utilized more often to deliver agriculture-related instruction	4.31	.65
I enjoy learning from the videotaped lessons	4.23	.62
It is more economical for persons to take classes that utilize videotape	3.90	1.22
Videotaped courses are mostly talking heads	3.80*	1.09
Learning through videotape is boring	3.62*	1.16
I would not take videotaped courses if I had some other means of acquiring course credit	3.48*	1.12
I feel more isolated as a student when I take courses by videotape	3.36*	1.32
I prefer videotape to traditional classroom instruction	3.25	1.18

\* Indicates negatively worded items that were reverse coded.

Note: Based on scale: 1=strongly disagree; 2=disagree; 3=undecided; 4=agree; 5=strongly agree.

The researchers sought to gain additional insights into the off-campus videotape program from the students' perspectives. Students were asked to write any comments they had regarding the program on the last page of the questionnaire. Approximately 66 percent (40) of the students wrote comments about the program. The following statements are a sample of those made by students:

I am able to apply these courses to my farming practices.

I like it. It is underwear convenient. I can watch the videos in my underwear. Try going to an on-campus class in your underwear.

More visual aids (or better ones) would have helped my understanding of the material.

Without the off-campus program it would have been very hard for me to receive a degree and to still support my family.

I have been pleased with the off-campus program. It has given me an opportunity to better myself and also receive college credit. When I call to ask questions the staff and instructors are courteous and helpful.

I am so happy that these programs are being offered as I have no other way at this time to further my education. Please keep offering these programs. To all those instructors that don't feel this is a valid way to earn a degree - WRONG. I have worked harder and learned more from the three video classes than from several on-campus classes. This is the way of the future.

I feel that there are two areas that could greatly improve the video courses. The first area would be to bring the level of the videos up to current technology. The other area that I feel needs to be addressed is to know your audience. The students taking these courses are older and want a more practical approach to the course content.

I would encourage instructors to utilize a number of methods in order to test the students' abilities! Presenting multitudes of concepts and covering mega pages of material and then choosing 50 questions to determine the students' abilities is not a fair assessment.

To me this whole program has turned my whole life around. It has opened doors that never would have been able to be opened. Please keep this program alive for others. I can never thank you enough for making a dream come true.

An introductory class on how to study with videotape would have proven useful. An instruction-type seminar for lecturers in how to best utilize this media format to communicate subject material to be learned may be helpful for students and instructors.

### Conclusions

Most of the off-campus students enrolled in videotaped courses during the fall semester of 1992 were male and were, on average, 36 years of age. The students were predominantly farmers or agricultural professionals, who brought a high degree of educational attainment to the program. The age and background of the students is indicative of a considerable amount of life and educational experiences related to agriculture.

Students were motivated to enroll in videotaped courses primarily to pursue master's and bachelor's degrees, but they were also motivated by a need for personal development.

Videotaped courses offered through the off-campus program are meeting educational needs of students throughout Iowa and surrounding states. Students indicate that videotape provides a valid means of delivering agriculture credit courses, and at least one student considered it to be the way of the future.

Most students held positive to strongly positive attitudes toward the use of videotape as a tool for delivering agriculture courses. The factors contributing most to the positive student attitudes were consistent with the desirability indicators identified by Gulliver and Wright (1989) and included convenience, opportunities for learning, and the ability to control the pace of learning.

### Recommendations

Demographic data for students enrolled in videotaped courses offered through the College of Agriculture should be periodically collected and shared with instructors. If instructors know the characteristics of the clientele being served, they will be better prepared to design and conduct distance education programs in a manner consistent with the educational needs of the clientele being served.

Agricultural education faculty should provide training for instructors in the off-campus program at Iowa State University. This training should be designed to assist off-campus instructors in becoming facilitators of the educational process and in planning and conducting programs with students, not merely for students.

Results of this study should be disseminated to College of Agriculture administrators. Administrators should be aware of the diversity of clientele being served by the program, as well as the receptivity of students to videotaped instruction.

Further research regarding the characteristics of students enrolled in videotaped agriculture courses should examine student learning styles. Clark and Verduin (1989) found, for example, that field-dependent learners were more likely to drop out of distance education programs. Are the off-campus videotaped courses offered by the College of Agriculture at Iowa State University taken primarily by field-independent learners? Knowledge of student learning styles would have implications for the teaching methods used by off-campus instructors.

Additional research is needed to identify effective instructional practices for videotape and to determine how students learn from videotapes. This knowledge is essential for designing programs to educate off-campus instructors in the effective use of videotape for delivering agriculture courses.

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