

OFF-CAMPUS STUDY IN AGRICULTURE: CHALLENGES AND OPPORTUNITIES

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Abstract

Off-campus degree programs are becoming more prevalent as universities recognize the need to extend educational opportunities beyond the campus. Students who enroll in off-campus programs differ from traditional college students and face a number of unique challenges in pursuit of their degrees. This study describes selected experiences of former agricultural distant learners with an off-campus agriculture degree program and describes graduates' perceptions regarding selected obstacles to off-campus study. Results of the study indicate that graduates were motivated to enroll in the off-campus program primarily to pursue a degree, took an average of five years to complete the program, and traveled to campus 20 or fewer times for reasons related to the off-campus program. Graduates of the program indicated that the most significant obstacles to off-campus study included limited course offerings, difficulty in balancing responsibilities, access to library facilities, and program costs. It was recommended that more agricultural courses be offered through distance education technologies to facilitate timely completion of the degree program. Also, it was recommended that partnerships be established to allow off-campus students to complete laboratory activities and obtain academic assistance from individuals or institutions in their local communities.

Off-campus degree programs are becoming more common as universities recognize the need to extend educational opportunities beyond the campus to adults who are unable to pursue degrees through traditional means. Off-campus degree programs fit well within the mission of land-grant university colleges of agriculture. The College of Agriculture at Iowa State University recognized the importance of extending degree programs to distant learners, and began offering an off-campus master of agriculture degree in 1979. The off-campus program expanded to include a bachelor of science degree in 1991. The purpose of the off-campus agriculture degree programs is to provide post-secondary agricultural education opportunities to persons who are unable to or prefer not to study on campus (Miller & Honeyman, 1993).

Off-campus students are significantly different from traditional college students. Distant learners are typically older and generally maintain a professional career in addition to taking courses (Wilson, 1991). Miller and Honeyman (1993) described off-campus learners enrolled in selected

agricultural videotaped courses as being older, generally farmers or agricultural professionals, and motivated to enroll in the program to pursue a degree. Lehtola and Boyd (1992) described agricultural distant learners as self-motivated and self-disciplined while Gulliver and Wright (1989) noted that distant learners did not place a high degree of value on interacting with other students. The unique characteristics of agricultural distant learners may interact with program variables to create unintended obstacles to off-campus study. Therefore, faculty, staff, and administrators involved with off-campus programs must understand and make accommodations for the unique characteristics and preferences of agricultural distant learners.

Students who pursue degrees through off-campus programs face a number of obstacles not normally encountered by traditional college students. Off-campus students often live too far from campus to attend on-campus classes, generally have a number of competing demands placed on their time, and are concerned with the costs

associated with college (Hezel & Dirr, 1990; Thompson, Simonson & Hargrave, 1991). Some authors (Miller & Honeyman, 1993; Owen & Hotchkis, 1991) contend that videotaped instruction can be effectively used to reduce the negative effects of obstacles related to time, costs, and convenience. Many institutions of higher education, including Iowa State University's College of Agriculture, are using television and videocassettes to a greater extent than other media to capitalize on these benefits (Gunawardena, 1988; Miller & Honeyman, 1993).

Research is needed to understand the nature of graduates' experiences with off-campus degree programs. Also, research is needed to gain further understanding of the obstacles that most significantly impede the agricultural distant learner's ability to participate in and benefit from off-campus study. This type of research will aid decision makers in constructing quality off-campus programs that accommodate the needs and preferences of agricultural distant learners.

Purpose and Objectives

The purpose of this descriptive study was to investigate the significance of selected obstacles to off-campus study in agriculture. Additionally, the researcher sought to describe selected program variables related to an off-campus agricultural degree program. The objectives of the study were as follows:

1. Describe selected demographic characteristics of graduates of an off-campus professional agriculture degree program;
2. Describe selected variables related to graduates' experiences with an off-campus professional agriculture degree program;
3. Describe the perceptions held by graduates of an off-campus professional agriculture degree program related to obstacles

encountered in off-campus study; and

4. Describe relationships between selected variables and graduates' perceptions of obstacles encountered in off-campus study.

Procedures

Population

The population for the study consisted of all persons who had earned a bachelor's or master's of agriculture degree from Iowa State University. Forty-six master's degrees and seven bachelor's degrees had been awarded through fall semester, 1993. All graduates (N=53) were included in the study.

Instrumentation

A six point Likert-type scale with response categories ranging from insignificant (1) to significant (6) was used to measure graduates' perceptions related to obstacles faced by off-campus students. An item pool for the perception scale was generated by interviewing administrators, advisors, professors, and students associated with the off-campus professional agriculture degree program.

Ten students enrolled in the off-campus program participated in a field test of the instrument. Ultimately, 13 obstacles were selected by the researcher to be included in the scale. Cronbach's alpha was calculated to estimate the internal consistency of the scale and resulted in a coefficient of .71.

The questionnaire included the obstacles scale in addition to selected demographic questions and questions related to graduates' experiences with the off-campus program. Content and face validity for the questionnaire were established by a panel of faculty and graduate students in agricultural education.

Data Collection

Data for the study were collected by mail questionnaire. The questionnaire, a cover letter, and a stamped return envelope were sent to all graduates of the professional agriculture degree program. Approximately four weeks after the initial package was mailed, a second complete package was sent to all nonrespondents. Two weeks after the second complete package was mailed, telephone calls were made to all nonrespondents to encourage their participation in the study. Forty-two master's graduates and four bachelor's graduates completed and returned the questionnaire for a response rate of 87%. The researcher redefined the population as the 46 graduates who completed and returned the questionnaire.

Data Analysis

All data were analyzed with the SPSS/PC+ personal computer program. Appropriate statistics for description were used, including frequencies, percents, means, standard deviations, Kendall's tau c statistic, point biserial correlation and Pearson correlations. All correlation coefficients were interpreted using Davis' (1971) descriptors.

Results

Graduates of the off-campus professional agriculture program ranged in age from 27 to 67 years. The mean age of graduates was 45 years with a standard deviation of nine. Approximately 89% (41) of the graduates were male.

Graduates were asked to indicate what their occupation was at the time of their enrollment in the off-campus program and at the time of this survey. Table 1 shows that graduates' occupations changed only slightly from the time they enrolled in the program until the time of the survey. Further analysis of the data related to occupation revealed that some graduates had taken on a second occupation since enrolling in the program. Graduates were asked whether or not a change in their occupation or position within their occupation was influenced by their professional agriculture degree, and approximately 46% of graduates responded affirmatively.

Graduates were asked to rank four motivating factors for enrolling in the off-campus program. The graduates rated pursuing a degree as the most motivating factor followed by acquiring

Table 1. Occupation of Graduates at the Time of Enrollment and at the Time of Survey

Occupation	At Enrollment		Current	
	f	%	f	%
Farming	16	34.8	16	34.8
Agriculture Extension	10	21.7	11	23.9
Agribusiness	9	19.6	9	19.6
Agriculture Education	4	8.7	2	4.3
Soil Conservation	3	6.5	3	6.5
Other	6	13.0	13	28.3

current technical knowledge, enjoyment of learning new information, and career advancement (Table 2).

Table 2. Mean Rankings and Standard Deviations for Factors that Motivated Students to Enroll in the Off-Campus Program

Motive	Mean	Std. Dev.
Pursuing a degree	1.59	.90
Acquiring current technical knowledge	2.52	.99
For the enjoyment of learning new information	2.93	1.09
Career advancement	3.12	1.17

73-84	9	19.5	80.4
85-96	5	10.9	91.3
97-108	2	4.4	95.7
109-120	1	2.2	97.8
121-132	1	2.2	100.0
Total	46	100.0	100.0

Mean=69.72; SD=22.77

The amount of time needed to complete the off-campus degree program ranged from a low of 24 months to a high of 126 months. A majority (58.7%) of graduates took more than 60 months to complete the program (Table 3).

Graduates of the off-campus program experienced a variety of delivery mechanisms for their courses. Several courses were taught at different sites in the state through conventional methods. Also, many students took courses by videotape whereas some took courses via satellite broadcast and through two-way audio and video communications technology. Generally, students were required to attend one or more on-campus sessions for each course even if the course was offered through distance education technologies. Table 4 shows that a majority (65.2%) of graduates traveled to campus 20 or fewer times. However, 13% of the graduates reported traveling to campus more than 31 times.

On a six point Likert-type scale, graduates were asked to rate the significance of 13 obstacles Table 3. Time in Months Taken by Students to Complete the Off-Campus Program

Number of Times	f	%	Cum%
13-24	1	2.2	2.2
25-36	3	6.5	8.7
37-48	5	10.9	19.6
49-60	10	21.7	41.3
61-72	9	19.5	60.9

Table 4. Number of Times Respondents Traveled to Campus for Reasons Related to the Off-Campus Program

Number of Times	f	%	Cum%
0 to 10	18	39.1	39.1
11 to 20	12	26.1	65.2
21 to 30	10	21.7	87.0
31 to 40	4	8.7	95.7
41 to 50	1	2.2	97.8
51 to 60	1	2.2	100.0
Total	46	100.0	100.0

to off-campus study. Table 5 shows that 10.9% (five) of graduates provided a mean score between 1.51 and 2.50 (moderately insignificant), and 43.4% (20) provided a mean score between 2.51 and 3.50 (slightly insignificant). The remaining 45.7% (21) of graduates provided a mean score between 3.51 and 5.50 (slightly significant to moderately significant). The overall mean score for the perceived significance of obstacles to off-campus study was 3.34 (slightly insignificant) with a standard deviation of .67.

Table 5. Overall Mean Scores for the Perceived Significance of 13 Obstacles to Off-Campus Study

Mean	f	%	Cum%
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1.51-2.50	5	10.9	10.9
2.51-3.50	20	43.4	54.3
3.51-4.50	19	41.4	95.7
4.51-5.50	2	4.3	100.0
Total	46	100.0	100.0

Mean 3.34; Std. Dev. .67

Note: Based on scale: 1=insignificant; 2=moderately insignificant; 3=slightly insignificant; 4=slightly significant; 5=moderately significant; 6=significant.

To further explain the perceived significance of the 13 obstacles to off-campus study, the percentages of respondents who rated each obstacle as slightly significant to significant are presented in Table 6. Four obstacles were perceived to be slightly significant to significant by a majority of graduates. The four obstacles were related to limited course offerings, difficulty in balancing responsibilities, access to library facilities, and program costs. Obstacles related to course prerequisites, financial aid, faculty understanding of student needs, and dealing with a number of departments were least significant.

Pearson correlations, point biserial correlations, and Kendall's tau c statistic were used to describe relationships between the perceived significance of obstacles to off-campus study and selected variables. The associations ranged in magnitude from negligible to low (Table 7).

Table 6. Percentage of Respondents Who Selected Slightly Significant, Moderately Significant, or Significant for Each Obstacle

Obstacle	%
1. Limited number of courses offered	82.6
2. Difficulty in balancing school, personal, and work responsibilities	71.7

3. Lack of access to library facilities	65.2
4. Cost of the program	60.9
5. Attending sessions held on campus	47.8
6. Course offerings did not fit needs	47.8
7. Lack of scholarships	47.8
8. Lack of access to instructors	47.8
9. Lack of access to other students	43.5
10. Dealing with a number of different departments	39.1
11. Faculty did not understand student needs	37.0
12. Accessing financial aid at the university	34.8
13. Prerequisites required for classes	19.6

Female graduates provided slightly higher mean scores on the perceived significance of obstacles to off-campus study scale, but the association was low and of little practical significance. The associations between perceived significance of obstacles to off-campus study and time to complete the program, number of trips to campus, and age were negligible.

Conclusions and Recommendations

Some graduates of the off-campus professional agriculture program reported taking on a second occupation after enrolling in the program. Notwithstanding the fact that graduates were least motivated to enroll in the off-campus program for

Table 7. Summary of Relationships Between Obstacles to Off-Campus Study and Selected Variables

Variable	Association
Time to complete program	-.06
Number of trips to campus ^a	.08
Age	-.02
Gender ^b	.24

^aKendall's tau c; ^br_{pb}

career advancement, 46% indicated that a change in their occupation or position within their occupation was influenced by their professional agriculture degree. It was concluded that graduates of the off-campus program enjoyed increased occupational opportunity and/or flexibility as a result of their degree. Perhaps this adds support to the assertion by Clark and Verduin (1989) that the degrees of distance learners are gaining acceptance.

Most graduates of the professional agriculture program took five or more years to complete the requirements for their degree and considered the limited number of course offerings to be the most significant obstacle to off-campus study. More agricultural courses should be offered through fiber optics, satellite broadcasts, and videotape to accommodate the educational needs of distance learners and to facilitate a more timely completion of their degree requirements.

Administrators should make efforts to encourage greater participation of college faculty in the delivery of off-campus courses. Administrators must recognize the additional efforts required of instructors who teach at a distance and consider this when evaluating the work of faculty members.

One of the often cited benefits of distance education is a reduction in the need to travel. This reduction of travel allows students to better use their time in balancing school, work, and personal responsibilities. Hezel and Dirr (1990) recognized the importance of time to the distant learner when they wrote, "although the term 'distance education' is becoming the accepted term for describing new educational opportunities that offer students flexibility for pursuing their degrees, time rather than distance seems to be the major constraint facing those students" (p. 6).

Most graduates traveled to campus 20 or fewer times for reasons related to the off-campus

professional agriculture degree program. Twenty trips to campus may be reasonable considering that most graduates took five or more years to complete their degree requirements, but advanced communications technology must be exploited further to reduce the amount of travel required of students. Also, partnerships between the university and secondary agriculture teachers, community colleges, and outlying research centers should be established. Students should be able to complete laboratory activities and obtain academic assistance from individuals and institutions in their local communities.

Overall, the obstacles to off-campus study were perceived to be slightly insignificant by graduates of the program. However, a majority of graduates perceived that limited course offerings, difficulty in balancing responsibilities, and program costs were slightly significant to significant barriers. Administrators should attempt to eliminate or minimize the effects of each of these barriers. Data from this investigation have been requested by and delivered to persons within the university responsible for policy decisions related to each of the obstacles.

Associations reported in the study indicated that the perceived significance of the obstacles to off-campus study was independent of graduates' age, gender, time needed to complete the program, and number of trips to campus. It may be reasonable to conclude that the program obstacles did not have a discriminatory effect based on gender and age of program graduates.

References

- Clark, T. A., & Verduin, J. R. (1989). Distance education: Its effectiveness and potential use for lifelong learning. Lifelong learning: An omnibus of practice and research, 12(4), 24-26.
- Davis, J. A. (1971). Elementary survey analysis. Englewood Cliffs, NJ: Prentice-Hall.

Gulliver, K., & Wright, T. (1989). Adult learners, distance education, and technology: It's the future but can we get there from here? Proceedings of the 8th National Conference on Adult External Degree Programs, Tampa, FL.

Gunawardena, C. (1988). Using communications technologies for distance education: Report on current practices in the United States. (ERIC Document Reproduction Service No. ED 327147)

Hezel, R. & Dirr, P. (1990). Understanding distance education: Identifying barriers to college attendance. (ERIC Document Reproduction Service No. ED 340335)

Lehtola, C. J., & Boyd, M. M. (1992). Agricultural safety: Effective teaching strategies and technological solutions. Journal of Applied Engineering in Agriculture, 8(4), 433-437.

Miller, G. & Honeyman, M. (1993). Attributes and attitudes of students enrolled in agriculture off-campus videotaped courses. Journal of Agricultural Education, 34(4), 85-92.

Owen, M. & Hotchkis, R. (1991). Who benefits from distance education? A study of Athabasca University graduates, 1985-1990. (ERIC Document Reproduction Service No. ED 341301)

Thompson, A., Simonson, M. & Hargrave, C. (1991). Educational technology: A review of the research. Ames: Iowa State University, College of Education, Department of Curriculum and Instruction.

Wilson, C. (1991). Trends in distance education: A viable alternative for higher education. (ERIC Document Reproduction Service No. ED 337081)