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Abstract

Agricultural faculty who teach distance courses face a variety of challenges not encountered in the traditional classroom environment.

Information and Training Needs of Agricultural Faculty Related to Distance Education

Greg Miller
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Agricultural faculty who teach distance courses face a variety of challenges not encountered in the traditional classroom environment. The purpose of this descriptive survey research study was to assess the information and training needs of agricultural faculty related to distance teaching and learning and to compare the needs of faculty in different types of institutions. Agricultural faculty were most interested in distance education applications to credit courses and placed greater emphasis on planning and teaching behavior topics than on learning and learner-related topics. Findings also revealed that faculty at different types of institutions provided similar rankings of potential topics for faculty development programs in distance education.

Introduction

Distance education offers an opportunity for meeting previously unmet educational needs in agriculture (Newcomb, 1993). However, this opportunity is fraught with challenges. Faculty who teach at a

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distance must:

> ... develop an understanding of the characteristics and needs of distant students with little first-hand experience and limited, if any, face-to-face contact; adapt teaching styles taking into consideration the needs and expectations of multiple, often diverse audiences; develop a working understanding of delivery technology, while remaining focused on their teaching role; and function effectively as a skilled facilitator as well as a content provider (Willis, 1994, p. 2).

Thus, an important challenge to higher education in agriculture concerns the professional development of faculty for the distance teaching experience. Willis and Touchstone (1996) noted that one key to successful distance education was faculty development and that faculty should receive training before their initial distance teaching experience.

Murphy and Terry (1995) characterized distance education as a communications process based on Gamble and Gamble's (1989) model. Murphy and Terry focused on the obstacles and challenges faced by the sender of information (agricultural faculty) in distance education. They discovered that teaching faculty in agriculture lacked competence in the use of electronic technologies used in distance education and faculty perceived that training and assistance opportunities were limited. Murphy and Terry recommended that programs be created to help teachers develop proficiency in teaching with electronic technologies.

To be successful, any education or training program must focus on needs of the learners. Newcomb, McCracken, and Warmbrod (1993) wrote that "learning activities should be provided that take into account the wants, needs, interests, and aspirations of students (p. 30)." Faculty training is needed for distance education, but what are the perceived needs and interests of faculty? A determination of the information and training needs of agricultural educators related to distance education will be useful in developing training programs to prepare agricultural faculty for successful distance teaching experiences.

Financial support for advancing a faculty development model in agricultural distance learning was provided by a USDA Higher Education Challenge Grant. To design a program that addressed important faculty development issues, a needs assessment was conducted. According to Caffarella (1982), "Identifying educational needs of potential participants is an important component in

designing educational programs (p. 10)." A systematic needs analysis serves the important role of reducing uncertainty about educational programming (McKillip, 1987). The marketing needs assessment model described by McKillip was used to guide this study. The marketing model focuses on the needs and wants of a definable population. The ultimate goal of this model is to achieve a match between what the delivering institution is capable of providing and what the target population is willing to participate in.

Purpose

The purpose of this descriptive study was to assess the information and training needs of agricultural faculty related to distance teaching and learning, and to compare needs of faculty in 1862 land-grant universities, 1890 land-grant universities, and non-land-grant colleges and universities.

Methodology

The population for this study consisted of academic deans and selected faculty in all colleges and departments of agriculture in the United States and its territories who were interested in a distance education training opportunity for agricultural faculty. These colleges and departments of agriculture were found in 50 1862 land-grant universities, 17 1890 land-grant universities, and 61 non-land-grant colleges and universities.

To assess the information and training needs of agricultural faculty related to distance teaching and learning, a list of potential training topics was composed by the researchers after conducting a careful review of the literature. Ultimately, 22 topics were organized into a Likert-type scale with response categories that ranged from very low priority (1) to very high priority (5). The instrument was reviewed for content and face validity by a panel of agricultural educators at an 1862 land-grant university, an 1890 land-grant university, and a non-land-grant university.

Data were collected by mailed questionnaires in the spring of 1996. All academic deans associated with colleges and departments of agriculture in the United States and its territories received a package containing a cover letter, three copies of a newsletter that explained the distance education training opportunity, three copies of the questionnaire, and three postage-paid return envelopes. The academic deans were asked to read the newsletter and complete and return one copy of the questionnaire. Academic deans then

were asked to select two professors from their department or college who were interested or involved in distance education and send to them a copy of the newsletter, the questionnaire, and a postage-paid envelope. A copy of the newsletter and a cover letter were sent to all department heads in agricultural education. The department heads were asked to promote the training opportunity with their academic deans and encourage them to respond to the survey. One complete follow-up of nonrespondents was completed one month after the initial mailing. This follow-up was conducted through electronic mail and by telephone. No procedures were undertaken to control for nonresponse error. It was reasoned that deans and faculty who responded represented those who were interested in the distance education training opportunity for agricultural faculty. Coaxing a response from faculty who were not interested in distance learning would have yielded inappropriate data for use in decision-making about faculty development programs. A total of 158 deans and professors from 72 different colleges or universities (36 from 1862 land-grant universities, 9 from 1890 land-grant universities, and 27 from non-land-grant colleges or universities) provided data for this study.

Data were analyzed with the SPSS personal computer program. Means, standard deviations, and rankings were used to summarize the data. Data provided by deans and professors were analyzed together, and the deans and professors were collectively referred to as faculty.

Findings

Table 1 shows the means, standard deviations, and rankings for 22 distance education topic areas by type of institution. Ratings varied considerably among the three groups. For example, the 1890 land-grant universities rated 11 topics above 4.00 on the five-point scale, while non-land-grant colleges and universities rated 8 topics at this level or higher. Only four topics were rated above 4.00 by agricultural faculty at 1862 land-grant universities. Topics were ranked based upon their mean ratings within each group. When rankings were used as the basis of comparison, the three groups provided fairly consistent assessments as to the importance of the 22 distance education topics.

Teaching techniques for distance education was the only topic that received a mean rating above 4.50 (very high priority). Most of the topics were judged to be of moderately high priority (mean scores between 3.50 and 4.49) by the agricultural faculty who

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Table 1

Descriptive Data for Importance of Selected Distance Education Topics by Type of Institution

		Type of Institution								
		1862 Land-Grant (n=80)			*1890 Land-Grant (n=19)*			*Non-Land-Grant (n=59)*		
Topic		*Mean*	*SD*	*Rank*	*Mean*	*SD*	*Rank*	*Mean*	*SD*	*Rank*
1.	Teaching techniques for distance education	4.41	.96	1	4.56	.86	1	4.64	.66	1
2.	Enhancing interaction in distance education	4.33	1.00	2	4.28	.89	7	4.29	.85	2
3.	Learner-centered teaching techniques	4.16	1.12	3	4.37	.83	4	4.04	1.05	7
4.	Designing instruction for credit courses	4.06	.91	4	4.42	.90	3	4.07	1.01	6
5.	Models of effective distance teaching	3.96	1.01	5	4.37	.76	4	4.15	.96	5
6.	Developing innovative multimedia presentations	3.95	1.10	6	4.11	1.24	9	4.20	1.01	4
7.	Principles of teaching at a distance	3.93	1.15	7	4.47	.70	2	4.27	.96	3
8.	Understanding distant learners	3.85	1.11	8	3.58	1.07	17	3.86	.95	10
9.	Distance education and the Internet	3.83	.98	9	4.32	.75	6	4.03	.93	8
10.	Evaluating distance teaching and learning	3.78	1.08	10	4.06	.94	10	3.68	1.02	13
11.	Learning at a distance	3.71	1.04	11	3.79	1.13	12	3.88	1.04	9
12.	Exemplary distance education programs	3.71	1.06	11	3.79	1.18	12	3.64	1.05	14
13.	Selecting and using distance education software	3.58	1.08	13	4.21	.71	8	3.73	1.26	12
14.	Evaluating distance education programs	3.58	1.04	13	3.74	1.05	15	3.58	1.04	15
15.	Assessing the demand for distant learning opportunities	3.56	1.09	15	3.79	1.23	12	3.74	1.13	11
16.	Designing instruction for non-formal groups	3.51	1.17	16	3.56	1.10	20	3.24	1.02	22
17.	Understanding distance education and its potential	3.35	1.07	17	3.58	1.43	17	3.56	.99	17
18.	Copyright issues in distance education	3.29	1.22	18	3.16	1.42	22	3.41	1.22	20
19.	Managing a distance education program	3.25	1.26	19	4.05	1.18	11	3.53	1.10	18
20.	The distance education delivery team	3.22	1.03	20	3.63	1.11	16	3.58	1.10	15
21.	The role of site facilitators	3.16	1.02	21	3.58	1.07	17	3.53	1.06	18
22.	Selecting and using distance education hardware	2.96	1.23	22	3.47	1.07	21	3.25	1.23	21

Note: Based on scale: 1 = very low priority; 2 = moderately low priority; 3 = average priority; 4 = moderately high priority; 5 = very high priority.

participated in the study. Six topics were considered of average priority (mean scores between 2.50 and 3.49) by 1862 land-grant university faculty, two were of average priority for 1890 land-grant university faculty, and three were of average priority for non-land-grant college and university faculty.

The highest ratings for information and training needs by faculty at 1862 land-grant universities were:

1. Teaching techniques for distance education;
2. Enhancing interaction in distance education;
3. Learner-centered teaching techniques;
4. Designing instruction for credit courses;
5. Models of effective distance teaching.

Ratings of priorities for information and training needs by faculty at 1890 land-grant universities were:

1. Teaching techniques for distance education;
2. Principles of teaching at a distance;
3. Designing instruction for credit courses;
4. Learner-centered teaching techniques;
5. Models of effective distance teaching.

Faculty at non-land-grant colleges or universities rated the following as their priorities:

1. Teaching techniques for distance education;
2. Enhancing interaction in distance education;
3. Principles of teaching at a distance;
4. Developing innovative multimedia presentations;
5. Models of effective distance teaching.

The topics given the lowest priority ratings by faculty at 1862 land-grant universities were:

1. Selecting and using distance education hardware;
2. The role of site facilitators;
3. The distance education delivery team;
4. Managing a distance education program;
5. Copyright issues in distance education.

Lower priority topics as perceived by 1890 land-grant university faculty included:

1. Copyright issues in distance education;
2. Selecting and using distance education hardware;

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3. Designing instruction for nonformal groups;
4. The role of site facilitators;
5. Understanding distance education and its potential;
6. Understanding distant learners.

Faculty at non-land-grant colleges and universities perceived the following topics to be of lowest priority:

1. Designing instruction for nonformal groups;
2. Selecting and using distance education hardware;
3. Copyright issues in distance education;
4. The role of site facilitators;
5. Managing a distance education program.

Conclusions, Recommendations, and Implications

Agricultural faculty placed greater emphasis on planning and teaching behavior topics than on learning and learner-related topics. Faculty were most interested in teaching techniques, models of effective teaching, principles of teaching, and designing instruction for credit courses. This is not surprising because distance education is a relatively new phenomenon to agricultural faculty. Glickman (1990) summarized literature related to the developmental stages through which teachers progress. Glickman noticed that beginning teachers have an egocentric motivation for teaching that revolves around survival and security. Once teachers have been assured of their security, they begin to be concerned with providing effective instruction for their group of learners (group motivation) and ultimately reach a stage of altruistic motivation. At the altruistic stage, teacher concerns expand from their group of students to include concern for all students. Glickman noted that teacher development may ebb and flow. When confronted with an unfamiliar situation, teachers may regress to a lower level of development until they are comfortable with the new situation. A follow-up study of the needs of agricultural faculty should be conducted in five years to determine if they have reached a level of development at which their concerns focus more on student issues.

Data provided by this group of agricultural faculty suggest that training programs should emphasize distance education for credit courses. Designing instruction for nonformal groups received relatively low ratings from all three types of institutions represented in the study but was rated lowest by non-land-grant universities.

The lowest-rated topics for faculty development related to administrative and technical concerns. Faculty were least interested in

distance education hardware and software; planning, managing, and evaluating distance education programs; and the role of site facilitators and other support staff. As they should be, faculty were most concerned about teaching and learning-related issues. Perhaps faculty plan to rely on technical support and administrative support systems in delivering distance learning opportunities to students.

Another topic rated relatively low for importance was understanding distance education and its potential. Agricultural faculty who responded to this survey have likely developed an interest in and basic understanding of distance education. They need not be further sold on its virtues and potentialities. This group of faculty may be more interested in practical information on how to use distance learning systems most effectively.

The data presented here would be useful to anyone planning a faculty development program in agricultural distance education. The results have direct implications for the USDA Higher Education Challenge Grant-supported project referred to earlier. The results were used to select program topics for five two-hour satellite broadcasts on distance learning. One project director from each type (1862 land-grant, 1890 land-grant, and non-land-grant) of institution with colleges or departments of agriculture comprised a committee to select program topics. The five programs include:

1. Focusing on the distant learner;
2. Planning for instruction at a distance;
3. Presenting instruction for distance learning;
4. Developing innovative multimedia presentations;
5. Models of effective distance teaching.

Enhancing interaction and use of the Internet were selected as crosscutting themes to be integrated into all programs. The programs emphasize topics that were important to potential participants including an emphasis on teacher-centered issues.

References

Caffarella, R. S. (1982). Identifying client needs. *Journal of Extension, 20* (4), 5-11.

Gamble, M. W., & Gamble, T. K. (1989). *Introduction to mass communications* (2nd ed.). New York: McGraw-Hill.

Glickman, C. D. (1990). *Supervision of instruction: A developmental approach* (2nd ed.). Boston: Allyn and Bacon.

https://newprairiepress.org/jac/vol81/iss1/2
DOI: 10.4148/1051-0834.1417

McKillip, J. (1987). *Needs analysis: Tools for the human services and education*. Newbury Park, CA: Sage.

Murphy, T. H., & Terry, R. (1995). Faculty needs associated with agricultural distance education. *Proceedings of the 22nd National Agricultural Education Research Meeting*, Denver, CO.

Newcomb, L. H. (1993). Transforming university programs of agricultural education. *Journal of Agricultural Education, 34* (1), 1-10.

Newcomb, L. H., McCracken, J. D., & Warmbrod, J. R. (1993). *Methods of teaching agriculture* (2nd ed.). Danville, IL: Interstate.

Willis, B. (1994). *Distance education at a glance: Guide #1*. University of Idaho, Engineering Outreach.

Willis, B., & Touchstone, A. J. L. (1996). A technological solution in search of an instructional problem. *The Agricultural Education Magazine, 68*, (11), 4-5, 9, 12.