Graduate Education in Agricultural Communication: The Need and Role

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Is there a need for graduate studies in agricultural communication? If so, what is the role of this education? This study asked opinion-leading professional practitioners and academicians these questions. Both populations gave the 'need' and 'role' variables positive ratings. Within the need variable, professional proficiency was rated highly by both populations. Training in research, teaching and technical skills was rated higher by academicians. Within the role variable, both populations gave moderately high ratings for communication systems, communication skills, and human relations education. Responses to open-ended questions strongly recommended that graduate programs should be flexible and tailored to each student.

Introduction

Twenty-six institutions in the United States offer undergraduate degrees combining agriculture and communication (Reisner, 1990) and seven institutions offer master's degrees. However, only one university offers a master's degree specifically in agricultural journalism. This same institution is also the only one offering a doctorate in the field.

Graduate training in agricultural communication is indicated by several points in the literature. First, a need for faculty trained in agricultural communication has been identified by leaders. Agricultural communication programs primarily have recruited faculty with backgrounds in agricultural education, journalism or other communication-related fields. However, variations in the theoretical bases and many differences in the specific priority of subject matter exist between these fields and agricultural communication.

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The differences could impair the process of educating students if the original theoretical bases and priorities are adhered to by faculty trained in other disciplines (K. Barrick, personal communication, June 1990).

In addition to the need for faculty, agricultural communicators have identified a need for research. In order for the field to mature, research is needed. Several potential research topics have been identified by members of the Agricultural Communicators in Education [ACE] (Carney & Paulson, 1990). The research and faculty needs might be fulfilled if graduate programs in agricultural communication existed. However, few studies have focused on whether graduate programs are perceived to be needed by academia or professional practitioners in the field. In a recent study, Wilson, Paulson & Henderson (1991) asked ACE members, among other things, if a master's degree in agricultural communication would be beneficial. Wilson, Paulson, and Henderson found that a master's degree was perceived as beneficial. Complementary to their research, the study presented here focuses on agricultural communication graduate programs in general.

Purpose and Objectives

The purpose of this study was to determine the need for graduate studies in agricultural communication. This study was designed to focus primarily on the need for and role of graduate programs in agricultural communication. The research objectives of the study included the following:

1) Describe the perceptions held by academicians regarding (a) the need for graduate programs in agricultural communication, and (b) the role of such programs.
2) Describe the perceptions held by opinion leaders among professional practitioners regarding (a) the need for graduate programs, and (b) the role of such programs.
3) Examine differences between the populations regarding their perceptions of need for and role of graduate programs in agricultural communication.

Definition of Terms

The first variable in this study was the perceived need for graduate programs. The need for graduate studies in agricultural communication is identified by the need for persons with the abilities to conduct research and teach and demonstrate professional proficiency and technical skills. Several statements were written to address four areas of interest: teaching, research, professional proficiency and technical skills. Items on teaching and research were based on work by Berelson (1960); items related to professional proficiency, and technical skills, such as techniques and technology of journalism, were based on findings of Amerson & Herbst (1978).

The second variable was the perceived role of graduate programs in agricultural communica-

tion. The 'role' of a university undergraduate program in agricultural communication is to teach students to disseminate agricultural information through media to farm and non-farm audiences (Evans & Bolick, 1982). Items related to 'role' focused on four general areas of educational programs related to advanced academic programs in agricultural communication (Kroupa & Evans, 1976):

1) Human relations education: the preparation to understand and manage people in a business setting.
2) Communication systems: education concerning how ideas are formed and transferred through agriculture.
3) Subject matter: knowledge of the fields of agricuture.
4) Communication skills: ability to gather, organize, analyze, and disseminate information.

The human relations education portion of the questionnaire focused on personnel and financial management (Kroupa & Evans, 1976), and understanding of cross-cultural barriers, global perspectives, and ethics in agriculture and communication (Reisner, 1990). Communication systems items addressed the role of communication methods in the transfer of knowledge (Kroupa & Evans, 1976). Subject matter education focused on the role of studies of agriculture in general or in specific fields (Kroupa & Evans, 1976; Duncan, 1957). Communication skills were addressed through items related to the gathering, organizing and presenting of news and information through broadcast, print and oral presentations (Kroupa & Evans, 1976; Larson & Hoiberg, 1987).

Methods

Populations. The target populations for this study were academicians and opinion leaders among professional practitioners in agricultural communication during 1991. The first accessible population was academicians who served as advisors for chapters of the Agricultural Communicators of Tomorrow [ACT]. The second accessible population was opinion leaders among professional practitioners in agricultural communication. This list was developed by the author and a panel of experts, comprised of members of the faculty and staff at Ohio State University in the Departments of Agricultural Education, Agricultural Economics and Rural Sociology, and in the Section of Information and Applied Communication. Officers of eight organizations representing professional agricultural communicators were contacted and asked to nominate persons they considered to be opinion leaders in the field. The list of nominees was reviewed by the panel of experts, and opinion leaders were selected from this list. Opinion leaders were selected for this study instead of using a random sample of professional practitioners because opinion leaders represent a more information-rich source (Patton, 1990).

Research Design. The study was descriptive in nature and uti-

lized survey methods. The study was conducted as a census of two populations—opinion-leaders among professional practitioners, and academicians.

Instrumentation. The instrument, developed by the author, was a mailed questionnaire. The questionnaire utilized six-point, Likert-type scales, which ranged from 1=Firmly Disagree to 6=Firmly Agree. A panel of experts, consisting of faculty and staff members in the Departments of Agricultural Education and Agricultural Economics and Rural Sociology and the Section of Information and Applied Communication at Ohio State University, established content and face validity of the instrument. A pilot test of the instrument with 20 purposefully-selected professional practitioners was used to establish reliability. Cronbach's Alpha reliability coefficients were .80 and .82 for items related to the 'need' and 'role' variables, respectively.

Data Collection. Data were collected through a mail survey. The instrument and a cover letter were mailed to the populations in July 1991. A separate card was enclosed for respondents to complete and return to request copies of the results. The first mailing was followed five working days later by a reminder postcard. Two weeks after the first mailing, a second complete packet was mailed, followed in five days by telephone calls and a final postcard reminder (Dillman, 1978). Of the 26 academicians selected for the study, 24, or 92.3%, returned questionnaires.

Of the 26 opinion-leading professional practitioners selected for the study, 23 or 88.5% returned questionnaires. Data from late respondents were compared to data from early respondents to control for non-response error (Miller & Smith, 1983). Respondents did not differ significantly according to results of a t-test for independent means ($p>.05$).

Data Analysis. Data collected in the study were analyzed using the personal computer version of the Statistical Package for the Social Sciences in the Department of Agricultural Education at Ohio State University. Summed scores from the Likert-type scales were interpreted as interval data (Adams, Fagot, & Robinson, 1965). Negatively worded items were recoded prior to the analysis. Because the data were obtained through censuses, descriptive statistics were used.

Summary of Findings

Six-point, Likert-type scales were used for all items related to need and role. The scales were anchored by 1=Firmly Disagree and 6=Firmly Agree.

Academicians' Perceptions. The mean score for items relating to the 'need' variable among academicians was 4.69, s.d.=0.44. Within the variable of 'need', items that were rated most positively were related to professional proficiency and research. No items related to need exhibited ratings lower than 3.0. Table 1 illustrates findings related to the 'need' variable.

The 'role' variable had a mean of 4.84, s.d.=0.32. Within this variable, items with the most positive ratings were related to communication systems, communication skills and human relations education. Again, no items garnered negative ratings. Only one item had a mean of less than 4.0; this item related to specific agricultural subject matter. Means for 'role' items are presented in Table 2.

Opinion-Leading Professional Practitioners' Perceptions. The mean score for items related to the need variable for this population was 4.36, s.d.=0.51. Within the variable of need, the most positive ratings were given to an item related to professional proficiency. Although the lowest ratings were given to items related to teaching and technical skills, no items had mean scores lower than 3.0. All mean scores for items related to 'need' are presented in Table 1.

The 'role' variable had a mean of 4.87, s.d.=0.41. Within this variable, the most positive ratings were given to items related to human relations education, communication systems, and communication skills. The lowest rated item related to specific agricultural subject matter, although no items had means lower than 3.0. Mean scores for items related to 'role' are presented in Table 2.

Examination of Differences Between Population Types. The populations of academicians and opinion-leading professional practitioners differed only slightly in their responses. For the need variable, the mean of responses by academicians was higher than opinion-leading professional practitioners by only 0.33 points on the six-point scale. Items related to research had higher mean scores among academicians, while both academicians and opinion-leading practitioners rated highly the items related to professional proficiency. Professional practitioners rated items concerning teaching and technical skills lower than academicians.

For the role variable, the mean of responses by practitioners was higher than academicians by only 0.03 points on the six-point scale. Both academicians and practitioners highly rated items concerning communication systems, communication skills, and human relations education. Both academicians and practitioners had lower mean ratings on items concerning specific agricultural subject matter. Practitioners also had low mean ratings for items concerning communication systems.

Selected Demographics. Twenty of the responding academicians (83.3%) were male, and four were female (16.7%). The mean number of years experience in agricultural communication was 17.9, s.d.=10.4. Of the academicians, 15 were tenured (62.5%), four were on tenure-track but not tenured (16.7%), and five were non-tenure track (20.8%). The number of undergraduate students advised by the academicians widely varied, with a mean of 27.8 undergraduate students, s.d.=26.8. The number

Table 1: Mean Scores for All Items Related to Need for Graduate Programs in Agricultural Communication.

	Academicians (N=24)			Practitioners (N=23)		
Need Items	n	X	s.d.	n	X	s.d.
Teaching Items						
Ag. Comm. programs should prepare students to teach well.	24	4.25	1.07	23	4.35	0.78
Improving teaching skills is not important in a graduate program in Ag. Comm.*	24	4.46	1.14	23	4.13	1.01
Teaching skills should be emphasized more in graduate programs in Ag. Comm.	24	4.00	0.96	23	3.60	0.83
Research Items						
Training in research is an important part of a graduate program in Ag. Comm.	24	5.38	0.92	23	4.87	0.82
Research is not important in a graduate program in Ag. Comm.*	24	5.42	0.93	23	4.83	1.07
Research should be emphasized more in Ag. Comm. graduate programs.	24	4.71	1.16	23	4.13	0.92
Professional Proficiency Items						
Graduate programs in Ag. Comm. should improve students' skills as professional journalists.	23	5.13	1.30	23	5.04	1.30
Improving skills as professional journalists is important in graduate programs in Ag. Comm.	23	4.91	1.04	23	4.87	1.36
Advancing students' skills as professional journalists should be emphasized more in graduate programs.	23	4.65	0.98	23	4.35	1.19
Technical Skills Items						
Graduate programs in Ag. Comm. should equip students with strong technical skills, such as computer literacy and electronic publishing.	24	4.58	1.25	23	4.00	1.62
Advancing technical skills, such as computer literacy, is important in a graduate program in Ag. Comm.	24	4.75	1.15	23	4.27	1.28
Advancing students' technical skills, such as computer literacy and electronic publishing, should be emphasized less in Ag. Comm. graduate programs.*	24	4.13	1.11	23	3.83	1.40

Scaling: 6-point Likert-type scale from 1=Firmly Disagree to 6=Firmly Agree.
*negatively-worded items recoded for data analysis.

Table 2: Mean Scores for All Items Related to Role of Graduate Programs in Agricultural Communication.

Role Items	Academicians (N=24) n	X	a.d.	Practitioners (N=23) n	X	a.d.
Human Relations Education Items						
Ag. Comm. graduates with advanced degrees should be able to:						
a. manage personnel.	24	4.17	0.92	23	4.52	0.73
b. handle financial matters such as budgeting.	24	4.08	0.97	23	4.48	0.85
c. deal with cross-cultural barriers.	24	4.88	0.95	23	4.87	0.97
d. appreciate global perspectives.	24	5.13	0.90	23	5.22	0.60
e. exercise ethics in agriculture.	24	5.54	0.66	23	5.70	0.47
f. exercise ethics in communication.	24	5.71	0.55	23	5.78	0.42
Communication Systems Items						
Ag. Comm. graduates with advanced degrees should understand how knowledge is transferred through different communication methods.	22	5.50	0.74	23	5.57	0.59
Ag. communicators with advanced degrees in general do not understand the role media plays in the transfer of knowledge.*	22	4.18	1.30	23	3.74	1.36
Ag. communicators with advanced degrees generally do not understand how knowledge is transferred though communication methods.*	22	4.18	1.37	23	3.91	1.34
Subject Matter Items						
Ag. Comm. graduates with advanced degrees should have in-depth knowledge in some specific areas of agriculture, such as agricultural marketing, dairy science, farm management and entomology.	24	3.71	1.55	23	3.78	1.48
Ag. Comm. graduates with advanced degrees should have general knowledge about many fields in agriculture.*	24	4.42	1.10	23	4.78	1.13
Communication Skills Items						
Ag. communicators with advanced degrees should be able to:						
a. analyze information.	24	5.42	0.50	23	5.22	0.67
b. logically present information.	24	5.42	0.65	23	5.35	0.65
c. find creative ways to present information.	24	5.38	0.65	23	5.35	0.65
d. present info. through broadcast media.	24	4.96	0.91	23	4.74	1.21
e. present info. through print media.	24	5.00	0.93	23	5.00	1.17
f. present info. through oral presentation.	24	4.92	0.97	23	4.83	1.11

Scaling: 6-point Likert-type scale from 1=Firmly Disagree to 6=Firmly Agree.
*negatively-worded items recoded for data analysis.

of graduate students advised was lower with a mean of 1.7, s.d.=0.5. One of the academicians held a bachelor's degree as the highest academic degree obtained (4.2%), while 10 held a master's degree (41.7%), and 13 held a doctorate (54.2%).

Three of the responding opinion-leading practitioners were female (13.0%) and 20 were male (86.0%). The mean number of years experience in agricultural communication was 26.9, s.d.=11.0. The mode for highest academic degree received was bachelor's degree, accounting for 10 of the practitioners (47.5%). Six of the practitioners held a master's degree (28.3%), and four held a doctorate (18.2%). One practitioner obtained a high-school diploma (4.5%), and one received an associate's degree (4.5%).

Synthesis of Open-Ended Responses. The final item on the questionnaire encouraged respondents to comment on graduate programs in agricultural communication. Four of the 24 responding academicians commented on graduate programs in agricultural communication. Almost exclusively, the comments focused on the importance of flexibility within the graduate program. The degree program should allow students to focus on areas of interest to them and courses that build upon, but not repeat, the students' previous education and experiences. Also, the program should relate to current trends, such as methods of targeting communication to narrow audiences. Other comments noted that a program toward a master's degree should concentrate more on professional skill development, whereas a doctoral program should focus more on communication theory, research and teaching.

Eleven of the 23 responding professional practitioners wrote comments concerning graduate programs. Again, flexibility of the program was a concern. Another issue was technical skills related to communication. One respondent commented on the value of understanding broadcast media. However, three respondents emphasized that knowledge of a specific medium and computer literacy should be fodder for on-the-job training. Writing skills, research skills, and understanding of agricultural policy and economics were emphasized. Less emphasis on agriculture was also recommended. In addition, one communicator explained that graduate programs in agricultural communication would most strongly benefit those who want to teach, conduct research or communicate in a scientific field.

Conclusions

The need for graduate studies in agricultural communication was identified by the need for persons with the abilities to conduct research and teach, and demonstrate professional proficiency and technical skills. In general, both academicians and practitioners perceive a need for graduate programs in agricultural communication. Academicians strongly recommend training and experience in research. However, opinion-leading practitioners do not perceive re-

search to be as strongly needed as professional proficiency. Practitioners also perceive training in teaching and technical skills to be of lesser importance.

The role of a graduate program is to equip students with skills obtained through education in human relations, agricultural subject matter, communication skills and communication systems. Both groups perceive the role of graduate programs in agricultural communication as important. The abilities to analyze information and logically and creatively present information should be fostered in graduate programs according to both populations. The groups also perceive as important the ability to present information in print media and to understand the role of communication systems in transferring knowledge.

Global perspectives and ethics in agriculture and communication also are perceived by both groups as important portions of a graduate program in agricultural communication. However, both groups perceive in-depth study of a specific field in agriculture to be inappropriate for graduate programs. Also, opinion-leading practitioners perceive the study of the specific role of media in the transfer of knowledge to be of lesser importance.

Implications

The findings of this study support previous work by several authors. Berelson (1960) wrote that the purpose of graduate programs in general is to prepare students to teach, conduct research and demonstrate proficient professional skills. This study supports Berelson, except for one area where practitioners perceived little need for teaching skills. Practitioners may not perceive teaching as a strong need because they are not often in formal teaching settings. The work of Amerson and Herbst (1978) indicated that professional proficiency and technical skills were important in graduate programs in communication. This study did not support technical skills as an important part of a graduate program. This finding may be due to the rapidly changing technology available for communication, because as soon as a new technology is learned, it may be outdated. However, academicians perceived a stronger need for technical skills, which may be due to the fact that they are leading students and incorporating new technologies into their program areas.

Similar to the findings by Larson and Hoiberg (1987), global perspectives and ethics in communication and agriculture were found to be appropriate topics for graduate programs in agricultural communication. These topics may be particularly important considering the societal changes occurring in the world. Also ethics in communication and in agriculture may be increasingly prioritized due to technological advancements made in these fields.

The findings of this study support some of the findings by Kroupa and Evans (1976). Kroupa and

Evans also found knowledge of specific fields in agriculture to be rated low. Communication skills were rated as highly important in the Kroupa and Evans study, as were communication systems. However, more importance was placed on business skills, such as budgeting and financial management skills in the Kroupa and Evans study.

Recommendations

Graduate programs in agricultural communication should be developed, and should be flexible, allowing students to tailor their programs to each student's specific needs. Programs should complement, not duplicate, previous experiences and education. Areas of specific skill development should be determined based on the individual's background.

The graduate program also should depend on the student's expectations concerning working environments. Students planning careers in university teaching and research should focus more on teaching, research, technical skills, and communication systems related to the transfer of knowledge. However, students who do not plan on working in this environment could focus more on other courses and experiences in a graduate program. Technical skills may be best learned on-the-job, particularly for students not planning to work in university research and teaching roles.

Study of a specific field in agriculture should be a low priority in graduate programs in agricultural communication. For students with little education and experience in agriculture, study of specific fields may be more important, particularly if they are targeting a specific agriculture industry.

Based on the findings of this study, a focus on communication skills and professional proficiency is recommended for graduate programs. In addition, concentration on global perspectives and ethics in agriculture and communication is needed.

Research Recommendations

Through this research a need for graduate programs in agricultural communication has been identified. Research should be conducted to further delve into the need and role areas under the heading of graduate programs in agricultural communication. Future research could refine the benchmark conclusions of this study, particularly in determining how great the need is for graduates of advanced academic programs in agricultural communication and how many employment opportunities exist for these graduates. In addition, further research should focus on the expectations of and need for graduates with master's degrees and graduates with doctoral degrees.

A qualitative study with members of the populations used in this study could provide valuable information. In-depth interviews and focus groups, as well as other methods, could triangulate findings and could be arranged at meetings of

professional organizations representing agricultural communicators. Following such a study, the perceptions expressed by respondents could be quantified through further research.

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