

Five-Year Follow-Up of Bachelor Degree Graduates In Agricultural Education

Robert J. Birkenholz, Assistant Professor
Agricultural Education
University of Missouri-Columbia

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Educational programs require continual evaluation in an effort to maintain quality in times of change. Wentling (1980) identified four phases in a comprehensive program evaluation system; context, input, process and product. Each phase of a comprehensive evaluation should focus on fulfilling the ultimate goal of program evaluation which is program improvement.

Agricultural Education faculty members at the University of Missouri-Columbia identified the need to conduct a follow-up evaluation of the undergraduate program. The evaluation was to focus on the outcomes of the pre-service teacher education program. Recent graduates were surveyed to collect information which could be used to make recommendations for improving the agriculture teacher education program at the university.

The purposes of this study were to assess the occupational status of recent graduates and to identify emerging trends which may contribute to an enhanced program of student recruitment. Information was collected and analyzed to identify characteristics of recent graduates and their occupational status since graduation.

Objectives

Objectives for this study were as follows:

1. To assess the occupational status of recent agricultural education graduates.
2. To assess the type and scope of preparatory experiences of recent program graduates.
3. To identify relationships between the type and scope of preparatory experiences of recent graduates and their personal income levels.
4. To develop recommendations to improve the undergraduate recruitment program in agricultural education.

Method

Data were collected from recent graduates using a mail-in questionnaire. The questionnaire was adapted by the investigator from a similar instrument used by Peterson and Rabideau (1981) in a follow-up study of University of Minnesota agricultural education graduates. Additional items were included to provide information specifically needed to fulfill the objectives of this investigation.

The questionnaire was reviewed by faculty members in agricultural education at the University of Missouri-Columbia for face and content validity prior to duplication. Modifications were incorporated to enhance the readability of the questionnaire and to insure accurate interpretation of items and resulting responses.

All students graduating with a Bachelor of Science degree in Agricultural Education from the University of Missouri-Columbia during the five-year period beginning December, 1979, and ending December, 1984, were included in the sample. Names and the last known address of 134 graduates were obtained from student files, the University Alumni Office or through personal contacts. Two students were deceased which reduced the sample to 132 surviving graduates. The sample which provided data for analysis was assumed to be representative of the target population which included future graduates of the program who were not accessible for data collection purposes.

Graduates were categorized into three groups by occupational status. Group 1 consisted of graduates who had never taught vocational agriculture, Group 2 consisted of graduates who had taught vocational agriculture but had since quit teaching and Group 3 consisted of those who were currently teaching vocational agriculture. Table 1 reveals the number and percent of graduates representing each of the three groups.

Table 1

Number and Percent of Eligible Respondents by Group

Group	n	% of Total
1. Never taught	45	34.1
2. Taught and quit	19	14.4
3. Currently teaching	68	51.5
Total	132	100.0

An explanatory letter, questionnaire and a self-addressed postpaid envelope were mailed to each graduate during the week of March 11, 1985. Three weeks later, a second questionnaire and follow-up letter were mailed to those who had not responded.

On April 12, 1985, the data collection process was terminated and the data were entered onto the University of Missouri-Columbia computer. The data were analyzed using procedures available through the Statistical Analysis System (SAS Institute, 1985) program. The a priori alpha level was established at the .05 level.

Results

Completed questionnaires were returned from 94 graduates resulting in a 71.2% overall response rate. The number and percent of responses collected from each group are presented in Table 2. Twenty-four questionnaires (53.3%) were collected from graduates who had never taught, 12 questionnaires (63.2%) were received from graduates who had taught and quit and 58 questionnaires (85.3%) were received from graduates who were currently teaching.

Table 2

Number and Percent of Responses Collected from Eligible Respondents by Group

Group	N	Responses	
		f	%
1. Never taught	45	24	53.3
2. Taught and quit	19	12	63.2
3. Currently teaching	68	58	85.3
Total	132	94	71.2

The potential for non-response bias was apparent as evidenced by the failure of 28.8% of the program graduates to provide usable responses. Twenty-four selected characteristics were examined to compare early versus late responders as suggested by Miller and Smith (1983) to test for non-response bias. Two characteristic means (i.e., years in FFA and years of farm experience) were found to differ significantly ($p < .05$) between those classified as early responders and late responders based on the postmark date on the return envelope. Differences identified were felt to be within the probability of chance variation; therefore, the data collected were assumed to be representative of the original sample.

The occupational status of agricultural education program graduates was assessed in several ways. It was noted that 65.9% ($n=87$) of the respondents had taught vocational agriculture at some time although 51.5% ($n=68$) were currently employed as vocational agriculture teachers.

Two respondent groups produced relatively wide variations in personal income levels. However, nearly all (98.3%) respondents who were currently teaching reported incomes between \$10,000 and \$30,000. Respondents who had taught and quit teaching vocational agriculture generally reported lower personal income levels with 83.3% earning \$20,000 or less per year. The greatest variation in personal income levels was revealed in the group of respondents who had never taught vocational agriculture. Data in Table 3 reveal the percent of respondents reporting levels of income collapsed into four \$10,000 ranges. Respondents with no experience in vocational agriculture teaching were approximately evenly distributed among the four ranges with a mode of 33.3% of the respondents reporting income in the \$10,000-\$20,000 range.

Nearly half of the respondents in Group 1 (never taught) and Group 3 (currently teaching) reported personal income levels in excess of \$20,000 whereas only 16.7% of Group 2 (taught and quit) respondents revealed annual income in excess of that level. Estimates of the mean personal income level for each of the three groups were calculated by multiplying frequencies by the midpoint of each response range. Program graduates who had taught and quit produced a personal income group mean of \$14,170. Graduates who were currently teaching reported an average personal income of \$19,820, and the average personal income of those who

Table 3

Personal Income Levels Reported by Respondent Group

Personal Income	Group		
	Never Taught N=24	Taught and Quit N=12	Currently Teaching N=58
\$10,000	25.0%	25.0%	0.0%
\$10,000-\$20,000	33.3%	58.3%	53.5%
\$20,000-\$30,000	20.8%	16.7%	44.8%
\$30,000-\$40,000	20.8%	0.0%	1.7%
Total ^a	99.9%	100.0%	100.0%

^aTotal may not sum to 100% due to rounding error.

had never taught was \$18,725. The grand mean of personal income computed for all respondents was \$18,819.

The occupational status of respondents was further assessed by analyzing factors associated with the amount of time each group spent in their work. Table 4 reveals group means for selected factors. Group 3 (currently teaching) reported the greatest number of hours per week spent on the job, the most evenings per month away from home on work-related business and the greatest number of months per year employed. Respondents in Group 1 (never taught) revealed the least months per year spent on the job and the least number of hours per week on the job. Group 2 (taught and quit) respondents reported the least number of evenings spent away from home on work-related activities.

Table 4

Group Means for Items Relating to Time Spent on the Job

Item	Group Means		
	Never Taught N=24	Taught and Quit N=12	Currently Teaching N=58
Number of months per year spent on the job	9.6	10.8	11.8
Hours per week spent on job	44.6	49.5	51.8
Evenings per month away from home on work-related activities	4.3	3.3	8.9

Preparatory experiences were assessed to identify the type and scope of experiences reported by respondents. Data in Table 5 reveal group means for various activities which may be related to the occupational status of agricultural education program graduates. Group 1 (never taught) reported higher levels of involvement in leadership activities as indicated by years of membership and the number of offices held in the FFA and 4-H. Group 1 (never taught) graduates reported less farm experience than did the other two respondent groups while Group 3 (currently teaching) reported over twice as much agribusiness experience as each of the other two respondent groups. Each group reported at least five years more preparatory experience in farming than in agribusiness.

Table 5

Degree of Participation in Preparatory Activities by Respondent Group

Activity	Group Means		
	Never Taught N=24	Taught and Quit N=12	Currently Teaching N=58
Years of farm experience	5.9	7.2	7.2
Years of agribusiness experience	0.5	0.2	1.1
Years in FFA	4.0	2.8	3.5
Number of FFA offices held	2.4	1.9	1.7
Years in 4-H	3.9	3.5	2.2
Number of 4-H offices held	1.8	0.9	0.6

High school and college activities were examined to assess the frequency of participation reported by each respondent group. Table 6 reveals the percent of each respondent group reporting participation in selected activities. Group 1 (never taught) respondents tended to reveal higher levels of participation in activities at both the high school and college levels. Most notably, nearly half (45.8%) of the Group 1 (never taught) respondents indicated they were members of a social fraternity while only 8.3% of Group 2 (taught and quit) respondents and 17.2% of Group 3 (currently teaching) respondents reported membership in fraternal organizations. Respondents who taught vocational agriculture and had quit (Group 2) tended to be less involved in activities at both the high school and college level.

The relationship between the type and scope of preparatory experiences and the occupational status of graduates was analyzed as part of this follow-up evaluation. Respondent income level was selected as a variable indicative of occupational status. Correlation coefficients were calculated to assess the relationship between the respondents' participation in selected high school and college activities and personal income. Activities which were found to be significantly related ($p < .05$) to higher personal income levels are presented in Table 7.

Respondents reporting membership in the National Agri-Marketing Association (NAMA), a social fraternity and those who had held greater numbers of FFA offices reported significantly higher levels of personal income. Other activities not reported in the table including

Table 6

Percent of Respondents Reporting Participation in Selected High School and College Activities by Group

Activity	Group		
	Never Taught N=24 %	Taught and Quilt N=12 %	Currently Teaching N=58 %
High School			
Student Government	58.3	33.3	36.2
Athletics	70.8	50.0	60.3
Speech or Debate	54.2	33.3	25.9
Other Activities	16.7	33.3	17.2
College			
Collegiate FFA	54.2	58.3	53.5
Alpha Tau Alpha	75.0	66.7	84.5
Block and Bridle	33.3	16.7	15.5
NAMA	20.8	0.0	0.0
Intramural Athletics	62.5	58.3	56.9
Religious Activities	20.8	16.7	19.0
Social Fraternity	45.8	8.3	17.2
Academic Honorary	25.0	16.7	27.6
College Government	16.7	0.0	12.1
Agronomy Club	4.2	0.0	5.2
Mizzou 4-H	12.5	0.0	3.5
Other Activities	25.0	33.3	19.0

Table 7

High School and College Activities Which Were Significantly Related to The Personal Income Levels of Respondents

Activity	r	R ²	P
Number of FFA offices held	.294	.086	.004
Membership in NAMA	.318	.101	.002
Membership in a social fraternity	.212	.045	.041

participation in student government, academic honoraries, athletics or other student organizations were not found to be significantly related to personal income.

Characteristics of recent graduates were assessed to identify factors which differed significantly among the three respondent groups. Results of the MANOVA procedure revealed Group 1 (never taught) respondents held significantly more offices in 4-H than did the other two respondent groups as reported in Table 8. Also, Group 3 (currently teaching) respondents reported significantly more months of employment per year and more evenings per month away from home on work related activities. Significant differences among respondent groups were not revealed for such factors as personal income, hours/week on the job, number of FFA offices, years in FFA or years of farm experience.

Table 8

Significantly Different Group Means for Selected Preparatory and Employment Characteristics

Characteristic	N	\bar{X}	F	P
Number of 4-H Offices				
Group 1--Never taught	24	1.83	4.99	.009
Group 2--Taught and quit	12	.92		
Group 3--Currently teaching	58	.63		
Months Per Year Employed				
Group 1--Never taught	24	9.63	5.89	.004
Group 2--Taught and quit	12	10.75		
Group 3--Currently teaching	58	11.79		
Evenings Per Month Away From Home				
Group 1--Never taught	24	4.29	10.14	.000
Group 2--Taught and quit	12	3.25		
Group 3--Currently teaching	58	8.94		

Discussion

Recent graduates from the agricultural education program at the University of Missouri-Columbia were surveyed to assess their preparatory experiences and current occupational status. Ninety-four of 132 (71.2%) graduates from 1979 to 1984 returned survey instruments which were included in data analysis. Slightly over half of the program graduates were currently teaching vocational agriculture and another 14.4% reported experience in teaching vocational agriculture. Remaining graduates (34.1%) reported no prior experience in teaching vocational agriculture.

Respondents reporting no experience in teaching vocational agriculture produced wide variations in personal income whereas those currently teaching revealed less income variability. It was further revealed that

the variability in personal income levels was greater within each respondent group than between groups.

Program graduates who were currently employed as vocational agriculture teachers reported being employed more months per year and spending more evenings away from home on work related activities. However, the number of hours worked per week was not similarly influenced.

Preparatory experiences and employment characteristics of program graduates were assessed to identify differences among respondent groups. Respondents with no prior teaching experience reported holding significantly more 4-H offices. Also, this respondent group tended to be more involved in high school and college activities than the two remaining groups. Graduates who had taught and quit tended to be the least involved in those activities. Respondents in the current teacher group reported being employed for significantly more months during the year and spending more evenings per month away from home on work-related activities.

Responses of program graduates were further analyzed to identify relationships which existed between selected characteristics and personal income levels. Three factors were found to be significantly related to personal income levels. The number of FFA offices held, membership in the National Agri-Marketing Association and membership in a social fraternity were found to be significantly related to higher levels of personal income among respondents.

The overall placement rate of 65.9% revealed that a substantial portion of the agricultural education program graduates have been employed as vocational agriculture teachers. Also, with over 50% of the graduates currently employed as vocational agriculture teachers, the placement and retention rate of graduates appeared to be moderately successful in the short-term. Further studies should be conducted to examine the placement and retention rate of program graduates over a longer time period.

Several questions emerged as a result of this study which provide a basis for further investigation. Although a relatively high placement rate among program graduates was revealed, this study did not attempt to determine the level of job satisfaction of respondents. Further research is needed to determine if graduates, regardless of their employment status, are satisfied with their current position. Job satisfaction may be a more important measure of success than the placement or retention rate of program graduates.

Future studies should focus on factors influencing graduates to seek employment in fields other than vocational agriculture teaching. Specifically, such studies should determine whether those factors were within or beyond the control of the graduates.

Additional research is also needed to determine the employment needs of those graduates who were not currently employed as vocational agriculture teachers. Skills identified may be incorporated into the undergraduate agricultural education curriculum without significantly diverting attention from the programmatic focus of teacher preparation.

Recommendations for improving the undergraduate recruitment program in agricultural education based on the data collected are as follows:

1. Emphasize that recent graduates reported higher average personal income levels as vocational agriculture teachers.

2. Emphasize that vocational agriculture teachers tend to be employed more nearly on a full-time basis.

3. Emphasize that students who have held more FFA offices, held memberships in the National Agri-Marketing Association and social fraternities report higher income in the five-year period following graduation.

This study was designed to identify characteristics of agricultural education graduates which would benefit recruitment efforts for future vocational agriculture teachers. Findings produced from this research revealed few characteristics or experiences which may be predictive of a student's predisposition to teach. Therefore, future recruitment efforts may be more fruitful by concentrating on communicating the benefits of a career in vocational agriculture teaching.

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