CASE STUDY

Basic vs Target Programs in Developing Curricula in Agricultural Economics

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Evaluation and development of curricula in agricultural economics continues to be a topic of discussion in the discipline. Continuing evaluation of curricula can be attributed to the nature of agricultural economics as a problem-solving discipline. This view has been reinforced recently by statements of presidents of the American Agricultural Economics Association in their presidential addresses to the association (Harl 1983, Havlicek 1986, Padberg 1988, and Mandersheid 1988). Analytical skills are critical when applying microeconomic and macroeconomic concepts to the complex problems resulting from technological change, changes in consumers' preferences, increased awareness of environmental problems and the increasing global interdependence of producers and consumers of agricultural commodities. On the other hand interpersonal and leadership skills are important for the agribusiness leaders who face these new challenges. Declining enrollments in colleges of agriculture have prompted discussions about how agricultural economics curricula can respond to these changes. An initial step should be an assessment of skills employers expect from agricultural economics or agribusiness graduates.

It was the aim of the Department of Agribusiness Economics at Southern Illinois University to determine what type of skills and characteristics are desired of our undergraduates. To do this, the department developed a study plan to seek input from alumni, administrators from the Colleges of Agriculture and Business, faculty from other disciplines as well as agricultural economists from other institutions. The focus of this study is the alumni survey regarding the skills and characteristics the alumni ranked as important for graduates to enter and advance in their occupations.

Method

To determine what characteristics and skills are expected of graduates to enter and advance in the alumis occupation, a list of skills and characteristics was presented in a survey form to be scored according to their relative importance. The skills and characteristics evaluated by alumni were modified from the AGRI-MASS survey developed by Litzenberg and Schneider. The 78 skills and characteristics were grouped into six categories: (A) business and economic skills; (B) computer, quantitative and management

information skills; (C) technical skills; (D) communication skills; (E) interpersonal characteristics; and (F) previous work experience. Each skill within the six categories was ranked on a scale of 1 to 10 as to its relative importance to enter and advance in the alumni's occupation, a list of skills and characteristics was presented in a survey form to be scored according to their relative importance. The skills and characteristics evaluated by alumni were modified from the of an individual who chooses a career similar to the particular alumnus responding.

Participants

The survey form was mailed to all alumni who graduated from the Department of Agribusiness Economics at Southern Illinois University at Carbondale with a B.S. or M.S. degree between 1960 and 1987. There were 204 respondents which was a 29 percent response rate. Fifty percent of the respondents had graduated from SIUC after 1975. The respondents indicated their current area of employment and employment position. Of the respondents, 25 percent listed employment in agricultural finance, 15 percent listed occupations in the agricultural input industry, another 14 percent were employed in government and academia, 13 percent listed farming or ranching, 8 percent indicated employment in commodity marketing, 3 percent listed food processing and distribution, and 22 percent were employed in other fields. When classified by their occupations, 33 percent were managers, 19 percent were self-employed, 13 percent were professional, 8 percent were staff members, 7 percent were sales representatives, 7 percent were supervisors, and 13 percent of the respondents listed an occupation other than those listed above.

Results

To summarize those characteristics and skills that alumni scored as most important, the results are reported first by the six category means (the mean response for all skills and characteristics within a category) for all alumni, and by employment area. Next, individual skills and characteristics with the highest mean response are evaluated for all alumni and by employment area. Finally, the results are examined according to the alumni ranking of the six categories.

Relative Importance of Skill Categories by Mean

The relative importance of the six categories for all alumni and by employment area is presented in Table 1. The reported response for each category is the mean response of all characteristics listed within each category. The categories of (E) interpersonal characteristics and (D) communication skills had the

Table 1. Average Response for Categories Overall and by Employment

Categories	Overall M	R	Ag. Finance M	R	Ag. Inputs M	R	Commodity Marketing M	R	Gov't. & Academia M	R	Farming M	R	Other M	R
A. Business & Economic Skills	6.7	3	6.6	3	7.2	3	6.5	3	6.3	3	6.9	3	6.6	3
B. Computation, Quantitative and Management Information	6.2	4	6.1	5	6.8	4	6.1	5	6.3	4	6.0	5	6.0	4
C. Technical Skills	5.3	6	5.1	6	5.8	6	6.0	6	5.4	6	6.4	4	4.4	6
D. Communication Skills	8.3	2	8.4	2	8.7	2	8.3	2	8.4	2	7.0	2	8.4	2
E. Interpersonal Characteristics	8.7	1	8.6	1	9.1	1	8.7	1	8.5	1	8.3	1	9.0	1
F. Previous Work Experience	6.1	5	6.4	4	6.3	5	6.4	4	6.0	5	5.7	6	5.9	5
Respondents (#)	204		49		30		15		29		27		43	

M = mean esponse of all characteristics within category
R = category rank by mean response of all characteristics

highest mean scores followed by (A) business and economic skills. The ranking of the top three categories by the mean score was consistent over all employment areas.

The last three categories of importance for all alumni were (B) computing, quantitative and management information; followed by (F) previous work experience and finally (C) technical skills. The order of the last three categories did vary by employment area and occupation but the differences between the means were small. The most notable difference associated with employment by industry was for the farming group in which the mean for (C) technical skills ranks fourth rather than last for all alumni. This finding is not surprising given the competitive market structure of farming which forces farmers to keep abreast of the latest technology to be competitive.

Among various employment positions (F) previous work experience ranked fourth ahead of (B) computing and quantitative skills among sales representatives but again the difference between means is small. Among self-employed alumni (C) technical skills was fourth up from sixth place for alumni as a whole. Again this reflects the attitude of farmers and ranchers who primarily make up this employment category.

Top Ranked Skills and Characteristics

The ten characteristics with the highest average score of relative importance are in order of highest to the lowest: self-motivation; self-confidence; positive work attitude; work without supervision; speak clearly and concisely with associates; high moral and ethical standards; give clear and concise instructions; work under varied conditions; provide leadership; and work with others or team player.

The top ten characteristics by different employment areas were basically the same for each area

with the exception of the farming and ranching group. The farmer group included the characteristics of: farm or ranch work experience; crop production skills; recognize business opportunities, together with read and use financial statements. In the agricultural finance industry 'read and use financial statements' ranked fifth. Among the agricultural input and commodity marketing industries 'speak clearly and concisely in group presentations' ranked in the top ten as well as 'recognize business opportunity'.

Other than the differences indicated above, there was little difference in the top ten characteristics considered important to alumni to enter and advance in the various industries. Characteristics from (E) the interpersonal characteristics category dominated the top ten characteristics recognized as most important followed by skills from (D) the communication skill category.

Among occupations there was little difference in the characteristics and skills that had the top ten highest scores, with the exception of the sales representative group. The sales representative group had: professional telephone skills; write technical reports, business letters and memos; professional selling skills; and recognize business opportunities among the top ten characteristics.

Ranking of Six Categories

Respondents were asked to rank the six general categories in terms of relative importance in entering and advancing in their given field. The results of this ranking for all alumni are in Table 2. The results of this procedure provide a somewhat different ranking of skill categories than evaluating the importance of categories by mean response of individual characteristics. Of the six general categories, 35 percent of the respondents ranked (A) business and economic skills as the most importance category; 27 percent indicated (D) communication skills as the most importance category and 23 percent indicated (E) interpersonal skills as the

Table 2. Distribution and Average Ranking of Categories

Category	Most Important 1	Importance 2	3	Least Important 4	5	6	Average Rank
A Business and Economic Skills	35	18	18	14	7	9	2.7
B. Computing, Quantitative and Management Information	2	10	15	23	27	25	4.4
C. Technical Skills	6	12	18	23	25	18	4.0
D. Communication Skills	27	33	21	7	10	4	2.5
E. Interpersonal Characteristics	23	22	14	17	11	14	3.1
F. Previous Work Experience	8	9	17	17	20	30	4.2

most important category. The average of the rankings within each employment category reveals that (D) communication skills were must important, followed by (A) business and economic skills; (E) interpersonal characteristics; (C) technical skills; (F) previous work experience; and finally (B) computing, quantitative, and management information. Thus, the ranking of general categories placed greater emphasis on the importance of business and economic skills than evaluating the categories by the mean response of all specific characteristics within each category. This suggests that agribusiness alumni are well aware of the value of business and economic skills, but when asked to place value on specific skills in the broad categories of communication and interpersonal characteristics were ranked somewhat higher.

The results of our alumni survey were generally comparable with those reported by Litzenberg and Schneider. The categories of (E) interpersonal characteristics, (D) communication skills and (A) business and economics skills ranked most important; whereas, (B) computing, quantitative and management information (C) technical skills and (F) previous work experience were ranked less important. The exact order of ranking was sensitive to the method of ranking, but the top three and bottom three categories were consistent across employment area and position of employment with the exception of the farm and ranch group which placed more importance on technical skills.

Implications for Developing Curricula

One of the implications from the Litzenberg and Schneider study was "generic agribusiness with a general focus may be ineffective." They concluded, "the differences in requirements, especially for technical skills, would indicate that academic agribusiness programs must carefully choose the appropriate market segment and match up industry needs with technical education." On the contrary, we view their results and ours as suggesting that an academic program with emphasis in application of basic business and economic skills, general education courses, and flexibility best serve the student's and industry's interest. We base our conclusion on several points. First, from our survey, the general lower ranking of technical skills relative to the other categories that was observed across all employment areas hardly supports the necessity of matching technical skills with a particular market segment demanding these skills. Even among farmers and ranchers for which technical skills in agricultural production are particularly important, these skills ranked fourth. Secondly, given the likelihood of graduates switching from one position to another or the fact that many graduates are never employed by an agribusiness firm precludes a targeted curriculum. From our study nearly one-fourth of the agribusiness economics graduates were employed in nonagricultural fields. The final point to consider is

that although the business and economic skills category was ranked the highest by more respondents than any other category, this category was ranked lower than the other categories when ranked by means of individual skills. This difference in ranking sugests that the core curriculum and general education requirements are valued more than the specifics. Thus, we conclude that curricula should stress the importance of a strong foundation which applies basic business and economic skills. The end product generated from the curricula should be students with the ability to communicate effectively and apply basic business and economic principles.

Another finding from both the Litzenberg and Schneider study and our study is the emphasis alumni place on communication skills, oral as well as written. For curriculum development this suggests the need to provide more opportunities for oral and written reports by students in courses. To increase the opportunities for oral and written reports, smaller size classes or the addition of recitation sessions, and therefore, additional resources to offer these sessions, would be necessary.

Finally, the results suggest the importance of academic advisors stressing that academic performance, while necessary, is not sufficient. The development of interpersonal skills through clubs and extra-curricular programs are an important element when entering and advancing in any given occupation.

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