

microcomputers would be a "boom" to the increased use of computer programs available only from main-frame computers via telephone linkage. Do you see an increase in the use of these main-frame computer programs? Why or why not? (Schmidt, 1986).

### Summary

Given the complexity of the current and emerging body of knowledge in agriculture and the demands placed on graduates of colleges of agriculture, professors will increasingly need to examine at what level of learning (lower versus higher levels of cognition) they are teaching. Unless students learn to operate proficiently at the higher levels of the cognitive domain, they probably will not be well prepared to serve in an ever-changing industry. It is the responsibility of all professors of agriculture and natural resources to be sure their instruction is planned and delivered in such a manner that these higher order cognitive abilities are developed.

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# Comparing Faculty and Alumni Expectations of Future Agribusiness Curriculum Content

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The effectiveness of any university program is influenced greatly by the content of the curriculum (1). For a curriculum to be effective, it must include what students **need**, as well as what they **want**. Students often want courses which will train them to accomplish specific tasks in their future occupations. What students need is to be educated in solving problems of all sorts faced in our society. In agribusiness, it is often easier to **train** students than to **educate** them because, as Roberts and Lee (2) found, their learning processes tend to favor sensing and factual materials over reading and intuition. Therefore, developing and maintaining a successful and effective agribusiness curriculum in this era of rapidly changing market demands is a challenging task.

In his presidential address to the American Agricultural Economics Association, Harl (3) expressed concern over whether university programs are adjusting rapidly enough to the new problems likely to be facing agribusiness in the future. Program adjustments are slowed by a number of factors, one of which may be that faculty perceptions of future market demands differ from those of people working in industry (4).

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Therefore, the purpose of this paper is to assess both faculty and alumni (as industry representatives) expectations of future agribusiness programs. This will be done by reviewing the results of the two surveys, one completed by each group.

### Faculty Survey and Results

To sample faculty opinions, questionnaires were mailed in 1984 to the heads of the 86 academic departments' listed by James (5). Data obtained from 51 departments are presented in this paper. Department heads were surveyed, rather than all faculty members because it was felt that department heads would reflect the views of their staff. While the survey dealt with many aspects of both undergraduate and graduate programs, this paper focuses on expected areas of undergraduate program growth.

To outline how agribusiness and agricultural economics faculty perceive future student demands for their services, department heads were asked to identify areas of growth and/or decline expected during the next five to ten years. The results are presented in Table 1.

The survey results reflect the dynamic nature of the market for agricultural economists. The agribusiness option is overwhelmingly the area of greatest anticipated growth. On the other hand, several traditional options are expected to become "soft spots"

**Table 1. Areas of Anticipated Growth in Undergraduate Enrollment in Agricultural Economics in the Next Decade**

Program Options	Percentage of Responding Institutions Specifying Each Category (a)				
	Greatest Growth		No Growth Decline		
	Second	Third	Growth	Decline	
1. Farm mgmt/prod econ	4	15	11	26	2
2. Ag marketing	9	24	15	9	0
3. Agribusiness	54	20	2	2	0
4. Ag econ (price, income analysis)	2	7	9	15	0
5. Intl trade/dev	7	2	20	9	0
6. Ag finance	2	20	17	11	0
7. Nat resource econ	9	9	0	26	2
8. Rur dev/soc	2	0	11	9	7
9. Human res econ	0	0	4	15	2
10. Consumer econ	0	0	4	9	4
11. Gen econ	2	0	0	15	0
12. Quant methods	0	7	7	11	0
13. Bus admin	7	2	0	9	0
14. Other	0	0	2	0	0

(a) Columns may not total 100% due to multiple answers given by respondents.

in enrollments. The farm management/production economics, natural resource economics, rural development, human resource and consumer economics, and general economics options each received about as many or more responses of "no growth" or "decline" as responses of expected growth.

Some relationships existed between regional expectations of growth. For responses in Table 1 concerning agribusiness, all regions in the U.S. indicated that the option was first or second in their growth expectations; in addition, all non-land grant institutions listed agribusiness as their area of greatest anticipated growth. However, no Canadian departments expect any growth in this option. For the farm management option, 50% of northeastern departments expect no growth, while 60% of southern departments list the option as first or second in expected growth. Responses from the South represent all of the "greatest growth" and about two-thirds of the "second growth area" replies for the farm management option. The South is also the only region to expect significant growth in the marketing option — 50%\* of southern departments listed it as their first or second area of anticipated growth. Finally, in the Northeast 50% of departments listed natural resource economics as their first or second area of expected growth while 40% of departments expect no growth in the option.

### Alumni Survey and Results

Alumni of agribusiness and agricultural economics programs were also surveyed in 1984. Questionnaires were mailed to 2,000 randomly selected recipients of undergraduate degrees from 15 institutions scattered across all regions.<sup>2</sup> About 500 questionnaires were returned and, of those, 429 were complete enough to use in the analysis. Responses were received from people with degree dates of 1959 to 1983, but over 50 percent of the responses came from people who graduated after 1976.

As part of the wide-ranging questionnaire, two open-ended questions were included to allow alumni, as industry representatives, to specify their opinions concerning what subject areas should be emphasized in students' curriculum and in what subjects alumni need additional education. The results are presented in Table 2. The discussion below deals mostly with the curriculum needs of students.

Surprisingly, alumni stressed the need for emphasis on basic education leading to better written and spoken communications skills. Apparently, alumni support increasing general education requirements. As for specific subjects that were singled out, accounting, finance, computer skills, and management headed the list. Accounting, finance, and computer skills were also listed most frequently as being areas where alumni felt they needed additional education.

It is appropriate to interpret the results in Table 2 as being a survey of demand for particular skills and/or

**Table 2. Alumni Opinion of Which Subjects Should be Emphasized (percent of 429 responses by alumni)**

Responses (Categories) <sup>a</sup>	Improved Understanding by Students	Needed by Alumni
Accounting/Budgeting (3,13)	18	10
Adaptability (16)	8	1
Business Management (3,13)	12	8
Career Planning	3	1
Communication Skills (15)	11	2
Computer Skills (14)	17	16
Creative Thinking (16)	3	1
Decision Making (12 and/or 15)	6	4
Economics (11)	4	1
Equipment Management (14)	0	1
Finance (6)	15	11
Foreign Language (14)	1	1
International Marketing (5)	*	1
Law (14)	2	4
Logic/Common Sense (16)	5	0
Marketing (2)	8	6
Math/Statistics (12)	3	2
Organizational Skills (16)	5	1
Personnel Management (3,13)	13	5
Pest Management (14)	*	0
Policy (4)	2	2
Practical Experience	14	5
Public Relations (14)	3	1
Reading Skills (15)	4	1
Sales (3,13)	6	1
Self Discipline (16)	9	1
Stress Management	0	*
Taxes	1	3
Time Management	1	1
Verbal Skills (15)	10	2
Writing Skills (15)	10	2
Other	4	1

Note: Columns do not total 100% due to multiple responses given.

\* Some response, but less than one percent.

<sup>a</sup> Responses which could be categorized as falling into one or more of the program options listed in Table 1 are labeled as such by the number in parenthesis here. Category 15 is for "General Education" and 16 is for "Personal Traits" responses.

curriculum. The subjects mentioned are not just topics to be studied, but topics to be **emphasized**, in the opinion of alumni. Therefore, academic departments can interpret these results as a signal from the "end users" of their "products." Alumni are saying that the subjects in Table 2 should be at least maintained, if not improved, in agribusiness programs.

### Faculty and Alumni Expectations

A comparison of the results from both surveys indicates that faculty and alumni agree, in general, about the areas of greatest curriculum and/or resource need. However, some differences do appear. Both groups identified agribusiness/business administration as the area of greatest need.<sup>3</sup> Yet, some options were cited by one group and not the other. Faculty listed farm management/production economics and international trade as areas of significant expected growth, while zero and one alumnus cited the areas, respectively. On the other hand, alumni identified quantitative methods/decision-making as the third most important area of emphasis by students, yet faculty expect only minor growth in those subjects.

These results have many implications; however, caution must be used when interpreting the data. The two groups were responding to different questions, so the results are not directly comparable. Faculty were asked to identify where enrollment increases were expected; alumni were asked to identify what curriculum areas are of greatest importance. This was done purposely, as explained below.

### Implications of the Results

The most important implication of the results may be that faculty face a significant job in explaining to students the differences between what they want and what they need in a university program. The faculty survey results show where students **are** going (what they want) and the alumni survey indicates where students **should** be going (what they need). To narrow the gap between the two, efforts to inform both students and faculty will be required. Information about skills needed in industry is often passed on to students by their faculty advisors (6,7), and through specially designed courses (8). But contact between industry and faculty may be more important (9,10) because faculty greatly influence what curriculum students **get**. Therefore, faculty need to continually monitor changes occurring in industry to note whether curriculum changes are needed.

There are some obvious problems that must be dealt with when academic departments develop their curriculum. A program that concentrates on student needs, at the expense of student wants, could soon lose favor in prospective students' eyes and, therefore, could suffer declining enrollments (which lead to declining budgets in this era). On the other hand, departments which sacrifice necessary courses in order to cater to students' wants will still lose enrollments in the long-run as employers become displeased with the

quality of graduates and the program declines.

In general, a qualitative assessment of the survey results leads to the conclusion that faculty are doing a good job of monitoring industry's needs, as reflected by alumni opinion. Department heads identified three of the four subject areas cited by alumni as needing emphasis in undergraduate programs. The **size** of the differences between faculty and alumni opinions of what curriculum content should be currently (approximately the values in Table 2) is relatively small.<sup>4</sup> This implies that agribusiness and agricultural economics departments have apparently been successful in balancing students' needs and wants in past curriculums. In the future that task is likely to be a continuing challenge.

### Footnotes

1. The sample for this study differs from that of most other studies because non-land grant institutions were included to give a more complete picture of the profession's academic segment. The self-reported status of responding institutions was: Land Grant- 87%, Non-Land Grant- 13%. The highest degree granted by the department: Ph.D.-48%, M.S.-41%, B.S.-11%.
2. The sample included at least one university from each region, however, no regional comparisons of results are made because of concerns over the representativeness of the limited number of respondents. The status of institutions which granted the degrees of respondents was: Land Grant - 67%, Non-Land Grant - 33%.
3. The agribusiness and business administration options are combined, as shown in Table 2, due to their similarities.
4. This subjective conclusion is based on the fact that a large majority of alumni apparently believe that necessary topics are being taught in sufficient depth. In other words, a minority of alumni indicates dissatisfaction with the coverage topics are receiving currently (as shown in Table 2).

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