

Internship opportunities in foreign firms, or American firms involved with foreign trade, could further enhance the program.

### Some Final Thoughts

Our discussion is focused primarily on curriculum issues. Other aspects of the internationalization of higher education in agriculture also warrant mention. One is that students from foreign countries are themselves exploitable resources. At the same time that they come to the U.S. to take advantage of educational opportunities offered here, we should use their knowledge of their home lands to expand the horizons of our classes. We can all improve our understanding of world agriculture and the institutional forces that shape it through classroom discussion focusing on specific issues, where the foreign student leads the discussion from the perspective of his home environment. Numbers of foreign students are sufficiently large at most Land Grant universities, especially at the graduate level, that a very wide range of interests is often represented in the average classroom.

Another non-curricular notion that warrants mention here regards faculty involvement. Without faculty dedication to a serious attempt to address the issues raised here, change will not occur. A critical core of faculty is needed to take responsibility for the international aspects of the program. These faculty should have international interests of their own. Department heads and higher administrators should encourage their faculty to become involved in research projects with international connections, to seek Fulbright fellowships to support professional experience overseas, and to become involved with cooperative programs with foreign educational or research institutions sharing mutual interests. As we argue that our students must be exposed to an expanding universe, so must faculty recognize the need to expand their world view.

The issues discussed here are not new. Certainly, at some institutions many of the ideas mentioned here have already been put into practice. However, we contend that an opportunity exists that has not been fully exploited. The evidence is clear that traditional employers of agricultural economics graduates are broadening their search for new employees. Traditional skills and rigor are no longer sufficient. It is equally clear that agricultural economics programs have much to offer our clientele, and we must broaden our appeal through innovative curricula, just as the public we serve innovates to maintain its competitive edge.

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## Skills and Characteristics Needed By Undergraduates Choosing A Career in Agricultural Sales

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Abstract

*This paper represents survey information designed to identify those skills and characteristics needed by undergraduates entering and advancing in agricultural sales. The top five rated traits describe a student who has a positive work attitude and is self-motivated, has the ability to work with others and be a team player, is self-confident and demonstrates loyalty to the company. Survey results indicate the educational and developmental needs of the agricultural sales undergraduate differ only slightly from any other student, regardless of his or her specialization.*

Today's agribusiness environment requires a business approach to dealing with sophisticated agricultural customers in a world beset with intense competition, razor-thin profit margins and rapidly changing production and business technologies. As a consequence, agricultural businesses have increased their emphasis in marketing. One outgrowth of this emphasis in strategic marketing is a number of sales position openings for agricultural students with a college degree.

Identifying the skills and characteristics needed by undergraduates entering and advancing in agricultural sales can assist students in making career choices and selected educational and developmental opportunities that will lead to successful careers in agricultural sales. Knowledge of skills and characteristics needed by undergraduates choosing a career in agricultural sales can also help departments and colleges of agriculture determine appropriate curricula, and aide employers in their selection of students who aspire to entry level sales positions. Such knowledge was the impetus for the research reported in this paper.

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**Table 1. Ranking of Individual Skills and Characteristics Needed by Undergraduates Entering and Advancing in Agrisales.**

Question Number	Description of Characteristic	Average Response	Standard Error	Rank in Category	Overall Rank
<b>A. BUSINESS AND ECONOMIC SKILLS</b>					
A.1	Read & use financial statements	5.89	1.59	19	57
A.2	Understand accounting concepts	5.58	2.11	21	63
A.3	Professional selling skills	9.42	0.88	1	5
A.4	Marketing administration	7.53	1.60	6	32
A.5	Corporate finance	5.58	2.37	22	64
A.6	Human resource planning	5.53	2.21	23	65
A.7	Micro (firm and consumer) economics	6.32	2.15	13	47
A.8	Macro (U.S.) economics	6.05	2.04	16	53
A.9	International economics	5.26	2.02	26	70
A.10	U.S. agricultural policy	7.11	2.22	9	39
A.11	International trade	5.68	2.05	20	59
A.12	National/international political effects	4.63	1.81	27	78
A.13	Objectives/goals/identification	8.32	1.84	3	23
A.14	Develop business policies & programs	7.37	1.63	8	37
A.15	Key performance areas (technical, financial & profit measures)	7.47	1.35	7	35
A.16	Coordinate human/physical resources	6.63	2.08	12	43
A.17	Process & product layout	5.95	2.11	18	56
A.18	Inventory management systems	6.68	2.05	10	41
A.19	Organizational structure	6.32	2.47	14	48
A.20	Identify and manage risk	6.63	2.01	11	42
A.21	Resource and environmental economics	6.05	2.24	17	54
A.22	Rural development	5.47	2.28	24	66
A.23	Budgeting	7.74	1.29	4	29
A.24	Investment analysis	6.21	1.67	15	50
A.25	Tax management	5.26	1.71	25	69
A.26	Promotional concepts	7.68	1.56	5	30
A.27	Developing market share	8.47	1.43	2	20
	Average	6.55	1.92		4
<b>B. COMPUTER, QUANTITATIVE, AND MANAGEMENT INFORMATION</b>					
B.1	General business software	6.26	2.42	4	49
B.2	Computer accounting systems	5.68	2.58	7	60
B.3	Purchase & implement computer systems	4.63	2.79	11	79
B.4	Design programs/communicate with programmers	5.42	2.50	8	68
B.5	Write computer programs	4.89	2.55	10	75
B.6	Design and implement management information systems	4.89	2.27	9	74
B.7	Use computers in management decision making	6.53	2.30	2	45
B.8	Interpret & use math & stat methods	6.11	2.40	5	52
B.9	Use quantitative tech for decision making	5.89	2.05	6	58
B.10	Word processing skills	6.37	2.23	3	46
B.11	Use of spreadsheets	6.89	2.25	1	40
	Average	5.78	2.40		6
<b>C. TECHNICAL SKILLS</b>					
C.1	Livestock production systems	6.63	3.08	4	44
C.2	Crop production systems	8.47	2.09	1	21
C.3	Specialized crop production systems	7.42	2.68	3	36
C.4	Soil chemistry & characteristics	7.53	2.85	2	34
C.5	Bio-science/biotechnology/biochemistry	6.00	2.55	6	55
C.6	Food science [ processing technology	4.89	2.22	8	72
C.7	Food transportation/distribution	4.74	2.22	10	77
C.8	Engineering technology	4.84	2.28	9	76
C.9	Computer controlled processes	6.16	2.18	5	51
C.10	General education-humanities	6.16	2.18	5	51
	Average	6.21	2.44		5
<b>D. Communication skills</b>					
D.1	Write technical reports/business letters and memos	8.42	1.53	7	22
D.2	Speak clearly & concisely with associates	9.16	1.09	2	10
D.3	Speak clearly & concisely in group presentations	9.32	0.98	1	8
D.4	Give clear & concise instructions	8.89	1.21	3	12
D.5	Express creative ideas in writing	8.21	1.76	8	24
D.6	Express creative ideas verbally	8.84	0.99	4	14
D.7	Read and critique specific technical information	8.05	1.96	9	26
D.8	Listen to & carry out instructions	7.84	1.39	5	15
D.9	Listen to & summarize oral presentations	7.84	2.21	10	27
D.10	Professional telephone skills	8.58	1.31	6	18
	Average	8.62	1.50		2

**Table 1 Continued**

<b>E. INTERPERSONAL CHARACTERISTICS</b>					
E.1	Provide leadership	8.84	0.93	9	13
E.2	Delegate responsibility & authority	8.11	1.45	12	25
E.3	Work with others/team player	9.63	0.58	2	2
E.4	Positive work attitude	9.68	0.57	1	1
E.5	Self-motivation	9.68	0.57	1	1
E.6	Self-confidence	9.58	0.67	3	3
E.7	High moral/ethical standards	9.11	1.02	8	11
E.8	Work under varied conditions	9.21	0.83	7	9
E.9	Recognize business opportunity	9.37	0.87	5	6
E.10	Select & supervise employees	7.26	2.34	13	38
E.11	Apply technical skills	8.74	1.33	11	17
E.12	Take & defend a position	8.79	1.28	10	16
E.13	Work without supervision	9.37	1.04	6	7
E.14	Loyalty to organization	9.42	0.75	4	4
	Average	9.06	1.11		1
<b>F. PREVIOUS WORK EXPERIENCE</b>					
F.1	Farm/ranch work	8.58	1.90	1	19
F.2	Domestic agribusiness	7.68	1.72	3	31
F.3	Financial institution	5.58	1.84	6	62
F.4	Non-agricultural retail firm	5.58	1.60	5	61
F.5	International agribusiness firm	5.21	2.17	7	71
F.6	Government/public affairs	4.89	2.25	8	73
F.7	Industry internships/coop work study	7.53	2.21	4	33
F.8	Extracurricular Activities	7.79	2.24	2	28
	Average	6.61	2.00		3

There is extensive literature devoted to how students who are contemplating careers in agribusiness should be preparing themselves for work in the agribusiness world, see for example, Eberle and Beck, Litzenberg et al., Litzenberg and Schneider, Morrison and Edwards. What subjects should they be studying? What skills should they be developing? What combination of work and study is best for most students? What are businesses looking for in a graduate? This paper narrows the focus to look specifically at the skills and characteristics needed of students entering the agribusiness community through agricultural sales.

### Survey Procedure and Results

In February of 1988 40 salesmen<sup>1</sup> in southern Illinois received a questionnaire that asked them to evaluate the skills and characteristics needed by undergraduates choosing a career in agricultural sales. The sample was derived from names of salesmen who participated in a "Day with a Salesperson Project" used in Agribusiness Economics 333 — Professional AgriSales — in the fall semester of 1987. The salesmen sold a variety of products including seeds, feeds, fertilizers, herbicides, insecticides, animal health care products, building structures and petroleum products. The salesmen were asked to rank the relative importance of 80 skills and characteristics of individuals entering and advancing in agricultural sales. Seventeen salesmen returned the questionnaire for a response rate of 42.5%.

The salesmen evaluated, using a 1 to 10 scale where 1 was least important and 10 was more important, the relative importance of the 80 individual characteristics and skills under six general categories:

1) business and economic skills, 2) computer, quantitative and management information, 3) technical skills, 4) communication skills, 5) interpersonal skills and 6) previous work experience. Each of the six categories was broken down into eight to 27 individual characteristics. The respondents received no explanation of the characteristics, consequently some questions may have arisen as to the meaning of specific skills and characteristics included in each general category. The individual characteristics, organized according to general category, their mean score and standard error, their rank in their respective category and their overall rank, appear in Table 1. The average the means for all the characteristics in a category is also reported in table 1, as is the rank-ordering of each general category.

The following summary highlights the salesman's attitudes about the skills and characteristics needed of undergraduates considering a career in agricultural sales.

1. Among the general categories, interpersonal characteristics has the highest mean-ranking. It also has the lowest standard error, which suggests the highest agreement among respondents as to the importance of this category. The other general categories rank in the following order of importance: communication skills, previous work experience, business and economic skills, technical skills, and computer, quantitative and management information. In addition to computer, quantitative and management information skills having the lowest mean-ranking, this category has the highest standard error of any category, suggesting the least agreement among respondents as to its importance.

2. Within the business and economic skills category there is one top-rated skill (mean of 9.00 or above) — professional selling skills. It ranks 5 overall.

3. The general category of computer, quantitative and information management has no top-rated traits. The highest ranked characteristic in this category is use of spread sheets which ranks 40 overall.

4. The general category of technical skills also has no skills and characteristics with a mean of 9.00 or above. Knowledge of crop production systems is the highest ranking trait in this category and ranks 21 overall. The top-ranked technical skills in this group relate to crop production which reflects the fact that a majority of the respondents sold crop related inputs — seed, fertilizers, herbicides, and insecticides.

5. Two of the 13 top-ranked skills and characteristics come under the general heading of communication skills. The ability to talk is rated above listening, writing and reading skills. In fact, the top three characteristics under communication skills are all related to speaking skills. This is not surprising given the fact that all of the respondents were sales representatives.

6. Nine of the top 12 skills and characteristics identified by the respondents come under the general heading of interpersonal characteristics. The top four under this category have the lowest standard errors of all 80 individual characteristics, which suggests the greatest degree of agreement among respondents as to their importance. Out of the top four traits, three are personal characteristics — self-motivation, positive work attitude, and self-confidence, while the fourth — the ability to work with others and be a team player — is a professional quality.

7. Within the general category of previous work experience, there is no skill or characteristic with a mean of 9.0 or above. Farm and ranch work is ranked one in the category and 19 overall.

8. To summarize with respect to individual skills and characteristics, the top five-rated traits describe a student who has a positive work attitude and who is self-motivated (tied for first)<sup>2</sup>, has the ability to work with others and be a team player, is self-confident and demonstrates loyalty to the company. Other top-rated characteristics (means of 9.00 or above) in order of importance are professional selling skills, the ability to recognize business opportunities, the ability to work without supervision, being able to speak clearly and concisely in group presentations, being able to work under a variety of conditions, the ability to speak clearly and concisely with an associate, and high moral and ethical standards. None of the top dozen skills and characteristics have a standard error above 1.09, which indicates a high degree of agreement among respondents with regard to the relative importance of these traits.

<sup>2</sup>Characteristics with equal means were ranked by placing the characteristic with the smaller standard error ahead of the characteristic with the larger standard error.

## Recommendations

While these 17 salesmen do not represent a scientific sampling, the skills and characteristics identified by them closely correspond to textbook recommendations for personal and professional development (for instance, see Downy et al.). The salesmen's responses are also consistent with the findings of other studies, although rankings are not in precisely the same order. This kind of survey could be extended to a regional or national survey to verify if, indeed, the results generalize to the agricultural sales profession throughout the United States.

The salesmen's responses do suggest some characteristics and skills that students need to develop to make them competitive in the agricultural sales job market.

1. Although a majority of undergraduate-level job candidates may be technically solid, they may lack the personal and professional characteristics needed to gain entry to the sales profession. The importance of personal and professional qualities needs to be stressed whenever possible. Besides developing these qualities in the classroom, involvement of students in campus and community activities may improve their personal and people management skills.

2. Students' communication skills — speaking, writing, listening and reading — need to be enhanced, although formal education is probably better able to teach speaking and writing rather than listening and reading. Students can have all the other skills and characteristics companies look for, but if they don't have solid communication skills their chances of gaining entry into the sales profession may be limited. In addition to students taking general education courses specifically designed to provide speaking and writing opportunities, agriculture courses need to provide more opportunities for students to write and to speak before a group.

3. Respondents viewed practical work experience, internships and extracurricular activities as valuable experiences for students considering careers in sales. Internships are an important part of a student's development. Students need to be strongly encouraged to take an active role in extracurricular activities, especially roles that involve assuming positions of leadership within departments, colleges, the campus and the community.

4. Students considering an entry level position in agricultural sales need to be exposed to professional selling techniques, but possibly gaining expertise in selling techniques is unnecessary. Employers might prefer to train a new employee in the professional selling techniques used by their company, rather than having to untrain employees who have learned unwanted sales techniques somewhere else.

5. Students need to gain an in-depth understanding of livestock and crop production systems, soil chemistry, feeds and nutrition, animal health care,

seeds, fertilizers, herbicides and insecticides.

6. Students considering entering the field of agricultural sales need to do the necessary course work in business management and marketing to have an in-depth understanding of marketing and promotional concepts, budgeting and financial analysis, organizational and management skills, and agricultural policy.

7. Although respondents ranked computer, quantitative and management information the lowest, a basic skill level in statistical methods and computer applications seems necessary. Additional expertise in using computer and quantitative techniques might enhance students' problem-solving capabilities.

### Conclusions

The results of this survey should be useful for students in making career choices about agricultural sales (a career in sales is not for everyone) and selecting educational and developmental opportunities for entry level positions in agricultural sales. Knowledge of the skills and characteristics deemed important for success in the area of agricultural sales can also help determine appropriate curricula in departments and colleges of agriculture. Such information may also help employers better identify specific characteristics associated with successful employment in the field of agricultural sales.

Although respondents ranked positive work attitude, self-motivation, self-confidence and loyalty to the company in the top five characteristics for undergraduates entering agricultural sales, it is probably difficult for employers to adequately assess these traits in prospective employees. It is also probably difficult for undergraduates to obtain training in these characteristics through traditional course offerings, since agricultural programs probably do not emphasize these topics in their curricula.

A majority of the other skills and characteristics identified in this survey can be developed through normal educational processes. Does this suggest that agricultural business and economics programs try to produce agricultural sales specialists at the undergraduate level? Probably not. But agriculture departments and colleges must be sensitive to the needs of employers. Survey results suggest that at a minimum a student considering an entry level position in agricultural sales should display a positive attitude, possess good personal and people management skills, have the ability to effectively communicate orally and in writing with others, have some exposure to professional selling skills, have a basic background in technical skills, such as crop and animal production and be able to apply basic business and economic skills to problem-solving situations. Survey results also suggest that students may improve their marketability if they take an active role in extracurricular affairs and if they gain some practical work experience, possibly through an internship. In sum, the educational and developmental needs of the agricultural sales un-

dergraduate differ only slightly from any other student, regardless of his or her specialization.

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## Training To Teach

D.G. Ely and K.K. Ragland

### Introduction

Everyone is a teacher — at home, in the office, in the barn, in the classroom, everywhere! But, are we really teachers? Or are we simply presenters of factual information? If we analyzed classroom and laboratory instruction in Colleges of Agriculture across the United States, what grade would we give it? The only way we can answer that question is to establish a measure for the quality of teaching. And, the most obvious way to measure effective instruction is to determine if the student learned. Then, if the student learned, the teacher taught.

At every level of education, except the university, instructors are trained to teach and must become certified to do so. We train M.S. and Ph.D. candidates for two to five years to conduct research (Knauft, 1982), but in general, we do not train them to teach. Ignoring this essential part of a graduate student's education results from the popular belief:

Those who can, DO.

Those who can't, TEACH.

Those who can't teach, TEACH TEACHERS.

We can change this outdated attitude by training graduate assistants to teach while they learn to research. Furthermore, if we do not train these students to teach, we are cheating not only the graduate student, but the people they will be teaching as well (Knauft, 1982). The purpose of this paper is to describe a method of training graduate students to teach in a university.

### Discussion

Students enter their graduate careers with varying levels of teaching expertise. Ph.D. candidates may have extensive experience in conducting laboratories,

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