

control over. Finally, student ratings for VTS as a delivery method and instructor feed back were 4.2 and 4.1/5.0, respectively. Students ranked teacher- student and student-student interaction at 3.9 and 3.8 respectively. We believe these results indicate that using the techniques described in this paper, it is possible for adequate teacher-student and student-student interaction to take place at a distance even without a direct face-to-face connection.

Conclusion

Gaining and maintaining interaction at a distance is a complicated challenge. It requires both technological support and instructional deliberations. The case described showed that the students' experience can be positive even with a physical separation of the instructor and limited amount of communication channels (no image available) The success of this distance class is not meant as another "technology-is-good-for-learning" scenario. Rather, it reveals that the content presentation, teacher-student interaction, and students-student interaction require deliberation and effort. Facilitating interaction is a difficult challenge even in a face-to-face situation, but it can be more so when it is at a distance. Through the weave of teaching philosophies and the adaptation of technology, instructors can make satisfactory interaction possible. As more advanced technologies are employed and promise to change the ways we do teaching and learning, a careful examination of our existing practices may be more important than ever. It should help us to learn not what technology can do, but what we can do with technology to achieve our long-held educational goals.

Literature Cited

- Dillon, C.L., S.M. Walsh, R. Weintraub, and E. Katz. 1992. The comparative learning benefit of one-way and two-way videoconferencing for distance education applications. Proceedings of the 8th Annual Conference on Distance Teaching and Learning. University of Wisconsin, Center for Distance Teaching and Learning, Madison, WI
- Garrison, D.R. 1989. Understanding education: A framework for the future. Routledge, New York
- Gibson, C.C. 1991. Changing perceptions of learners and learning at a distance: A review of selected recent research. American Center for the Study of Distance Education Research Monograph, 4.
- Haynes, K.J.M., and C. Dillon. 1992. Distance education: Learning outcomes, interaction, and attitudes. *Distance Education*. 33(1):35-45.
- Hsu, S. 1997. Connecting at a distance: The impact of technology on teaching and learning experiences in distance education. Ph.D Diss., University of Illinois at Urbana-Champaign, IL
- Moore, M.G. 1990. Three types of interaction. *American Journal of Distance Education* 3(1):1-5
- Moore, M.G., Thompson, M.M., Quigley, B.A., G. C. Clark, and G.G. Goff. 1990. The effect of distance learning: A summary of literature. American Center for the Study of Distance Education Research monograph, 2.
- Thompson, G. 1989. Provision of student support in distance education: do you know what they need? In R. Sweet (Ed.), *Post-Secondary distance education in Canada: Policies, practices and priorities*. Athabasca University and Canadian Society for Studies in Education Athabasca, Alberta, Canada

Curriculum Development: Starting with the Marketplace

Marianne McGarry Wolf and David J. Schaffner
Agribusiness Department, California Polytechnic State University
San Luis Obispo, CA 93407

Abstract

Using a multiphase research approach, the Agribusiness Department at Cal Poly San Luis Obispo designed a new curriculum to serve agribusiness in a global environment. First the authors conducted secondary research to examine industry needs, existing programs, and agribusiness education theories. Then primary research was

conducted to identify the types of skills and courses needed by employees of California agribusinesses. The skills found most desirable are already addressed in the core curriculum of the agribusiness major; therefore, further research focused on developing the international concentration. In a joint discussion group, agribusiness executives and

agribusiness faculty separately ranked courses to be included in an international agribusiness curriculum. The executives and faculty generally concurred as to the important topics to be included. Likewise, they generally agreed on the lowest-ranking ten topic areas. Neither group saw country-specific topics or narrowly focused courses, such as law or taxation, as sufficiently important to require inclusion. The program design for the International Agribusiness concentration includes the 13 topics top-ranked by faculty and 11 of the 14 topics top-ranked by industry in its six required courses. The new concentration incorporates existing courses university-wide, and new and existing courses from within the Agribusiness Department.

Introduction

Agribusiness curricula should be designed to address emerging professional skill requirements. Reflecting these changing requirements, curriculum adjustments are evolutionary, but at times the teaching institution itself is not the first to recognize the need for change. The value of departments undergoing examination, externally and internally, is well stated by Ronald Larson: "To remain competitive, departments need to periodically review the market and what their customers desire" (1996, p. 152).

Recently, Cal Poly's Agribusiness Department saw the need to develop a greater presence in international agribusiness management at the undergraduate level to better serve the students and the agribusiness community. The continual globalization of agribusiness through exports/imports, alliances, and foreign direct investment has reached the point that "agribusiness is international" is an axiom. For example:

About twenty-five percent of all agricultural products produced in the U.S. are exported. (USDA)

Direct Foreign Investment (DFI) by U.S. food companies result in over twenty-five percent of their sales. (Henderson and Handy)

U.S. agricultural exports to our NAFTA neighbors, Mexico and Canada, are growing at over ten percent a year and in 1998 were nearly \$13 billion. (USDA)

Twenty-five years ago, the curriculum's two majors-Farm Management and Agricultural Business Management were collapsed into one major with two concentrations, each with the names of the previous majors. Then the major was modified in the mid-1980s to include four concentrations: Farm Management, Agricultural Marketing, Finance and Appraisal, and Agricultural Policy (Blank, 1985). Although international topics and issues are broached in a number of courses-policy, marketing, and a specialized course in international trade policy and

marketing-the curriculum has never incorporated a specialized area of study with the title, "International."

Given the continuous trend over the past decades toward a more integrated world food economy, the faculty agreed that curriculum changes providing a focused body of knowledge addressing international agribusiness management were in order. However, the faculty members were reluctant to become over-specialized at the undergraduate level and to offer a proliferation of courses at the risk of a dilution in faculty resources and program quality. To better define the need for an international agribusiness management curriculum, the researchers utilized secondary data and two primary data information-gathering efforts to develop a situation analysis which described the current academic and agribusiness environment.

The Agribusiness Department first examined international programs offered by other Agribusiness Departments in California and those offered by the top business schools in the United States. After examining the courses and programs that are currently offered by other universities, the Agribusiness Department chose to determine what skills and course work are valued by agribusinesses operating in the global marketplace through the use of primary and secondary data.

Existing research concerning the skills needed by agribusiness employers was examined. After analysis of secondary data, university curriculum and skill needs from agribusinesses, a survey was developed for administration to agricultural product exporters. The survey included ratings of the existing course topics and skills identified in the secondary research. In addition, the survey of agricultural product exporters was followed by a probing, open-ended executive discussion group session that included representatives from industry and academia.

Methods

Existing Academic Programs and Research Concerning Skills

An examination of college catalogs and information provided through the internet indicated that five California state universities offer degrees in agricultural business: Cal Poly San Luis Obispo, Cal Poly Pomona, Chico State, Fresno State, and UC Davis. Cal Poly Pomona has an International Agribusiness minor. Fresno State offers a career specialty area in International Agribusiness. UC Davis offers a major and a minor in International Agricultural Development. A matrix comparing the course offerings of each institution showed similarities in international course offerings among schools. The courses appearing most frequently were included for evaluation in the primary research.

Research to identify the skills and competencies agribusiness employers desire in a graduate has been conducted in earlier works. Most notable is the Agribusiness Management Aptitude and Skill Survey (AGRIMASS), which ranked desired skills and characteristics of agricultural economics/agribusiness graduates (Litzenberg and Schneider, 1987). The research conducted at Cal Poly, while similar in approach to the AGRIMASS study, differs in that it focuses on "international agribusiness management" education and uses a multiphase approach to arrive at the specific course content for a concentration in international agribusiness management within an Agribusiness major.

Survey of Agricultural Product Exporters

Since the purpose of the research was to develop an international agribusiness curriculum, quantitative research was conducted among agricultural exporters to determine the skills and training their firms desire in potential professional employees. The research population, agricultural exporters located in California, are listed in the California Agricultural Exporting Directory (California Department of Food and Agriculture) This directory provided the sampling frame for the research. A random number generator was applied to the population of approximately 1,400 exporters to yield a sample of 813 companies representing agricultural exporters.

The feasible methods for administering the survey were fax and mail. Since the fax method has a faster response time than the mail method, the fax method was tested. Ten surveys were faxed to agribusinesses in the sampling frame to test the clarity of the questions and the response rate. The pre-test of the fax method was successful, and the fax method chosen as the appropriate method for administration of the survey.

The agribusinesses received fax questionnaires with an introductory letter explaining the purpose of the survey. The questionnaires were faxed to individuals responsible for hiring management level employees during April and May of 1997. After the fax was delivered, telephone calls were made to each agribusiness to confirm that the appropriate person received the questionnaire and increase the response. The 100 questionnaires returned resulted in a 12.3% response rate. The authors have experienced response rates ranging from 5% to 20% during the past five years for phone and fax questionnaires of similar length to management in agribusiness firms. Difficulty in obtaining a better response rate is probably due to time demands on agribusiness managers and/or lack of interest. Therefore, there could be a response bias in that the respondents were more interested in the topic. For data entry and analysis, the software package SPSS for Windows was used. (Marijs J. Norusis/SPSS)

Results and Discussion

The survey respondents represent a diverse group of agribusinesses. For companies that responded, 1996 gross sales ranged from \$80,000 to \$1.25 billion, with a mean of \$65 million and a median of \$17 million. On average, respondent companies employed 230 people. They had participated in international agribusiness from less than a year to 70 years, with a mean of 17.5 years and a median of 11 years.

Skills, Backgrounds, and Training for Potential Employees of Agricultural Exporters

The professional hiring needs of agricultural exporters were examined through the rating of: The desirability of 18 specific skills, experiences, and areas of knowledge for potential employees. The importance of 27 topics in courses at the college level for recent college graduates as potential professional employees in their firm.

The skills and topics were chosen based on information generated by the secondary research.

Ranking of Skills and Backgrounds. Eighteen different skills, experiences, and areas of knowledge were evaluated using the following question:

In this portion of the survey, we are interested in your thoughts about the skills and background you desire for potential employees in international agriculture. The following is a list of features you may look for in a potential employee. Please use the following five-point scale to indicate how desirable you feel each of the following is to you for potential employees: 5 = Extremely desirable, 4 = Very desirable, 3 = Somewhat desirable, 2 = Slightly desirable, 1 = Not at all desirable.

Analysis of the mean ratings of the interval data indicates that the skills and backgrounds are divided into three groups: very to extremely desirable skills and backgrounds, somewhat to very desirable skills and backgrounds, and slightly to somewhat desirable skills and backgrounds. The mean ratings are presented in Table 1, with the ranking based on the mean rating.

The skills for potential professional employees most desired by agricultural exporters are general skills, and the least desirable are specialized skills. The very to extremely desirable skills and backgrounds are general skills: *good ethics, strong communication skills, ability to be trained on the job, general business knowledge, and computer skills.* The next group, somewhat to very desirable skills and backgrounds, includes both general and specific

Table 1. Desirability Mean Ratings of Skills, Backgrounds, and Training for Potential Employees of Agricultural Product Exporters

	Mean Rating Based on 5 Point Scale (n = 100)	Rank Based on Mean (n = 100)
<u>Very to Extremely Desirable</u>		
Good ethics	4.65	1
Strong communication skills	4.64	2
Ability to be trained on the job	4.48	3
General business knowledge	4.31	4
Computer skills	4.03	5
<u>Somewhat to Very Desirable</u>		
General marketing knowledge	3.90	6
Ability to speak a foreign language	3.82	7
Sales experience	3.60	8
Understanding of international economics	3.46	9
Experience in production agriculture	3.46	9
Knowledge of international cultures and customs	3.43	11
Knowledge of transportation and logistics	3.39	12
Understanding of international finance	3.33	13
A high college GPA	3.15	14
Internet skills	3.09	15
Purchasing experience	3.00	16
<u>Slightly to Somewhat Desirable</u>		
Internship experience in a foreign country	2.94	17
Region specific specialization	2.68	18

skills and abilities, and the slightly to somewhat desirable characteristics have the narrowest focus, such as *internship experience in a foreign country*. These results imply that agricultural exporters desire potential employees who are ethical, have strong communication skills, and can be flexible about training for specialized tasks within their company.

The types of skills desired by agricultural exporters located in California are similar to those required by a diverse nationwide group of agribusinesses surveyed by Litzenberg and Schneider in AGRIMASS (1987). Their research indicated that strong personal skills and strong communication skills are more important than specialized skills. The AGRIMASS study, based on a sample of 543 agribusinesses from 41 states, solicited ratings for 74 characteristics in six categories: business and economics; computer, quantitative, and management information; technical skills; communication skills; interpersonal qualities; and employment, work, and general experience.

According to the AGRIMASS study, interpersonal qualities scored highest among the six categories. The top three of the 74 characteristics were *self-motivation, positive work attitude, and high moral/ethical standards*. The interpersonal skills examined in the California survey were *good ethics* and *ability to be trained on the job*. *Good ethics* ranked number one and *ability to be trained on the job* ranked number three among the 18 ranked skills.

The agricultural product exporters surveyed in the California study ranked strong communication skills second of the 18 individual characteristics. Similarly, in the AGRIMASS study, communication skills ranked second among the six general areas. The specific communication skills, *listen and carry out instructions* and *give clear and concise instructions*, generated overall ranks of 5 and 8 among the 74 individual characteristics in AGRIMASS, while business and economics skills ranked third among the six categories. *General business knowledge* ranked fourth of

the 18 characteristics examined in this research. Both studies ranked specific business experience and technical skills lower than interpersonal and communication skills.

Importance of Topics in Courses for Recent College Graduates. The 27 topics that may be taken in courses at the college level were evaluated using the following question:

Now we would like you to think of specific topics which students may take in courses at the college level. Please indicate how important you feel each of the classes are for recent college graduates you may hire. Please use the

five point scale where: 5 = Extremely important, 4 = Very important, 3 = Somewhat important, 2 = Slightly important, 1 = No: at all important.

The importance ratings are shown in Table 2, with the rank based on the mean rating. Evaluation of the mean ratings of the interval data indicates that the 27 topics are divided into two groups: somewhat to very important topics and slightly to somewhat important topics. None of the 27 rated topics generated means in the very to extremely important categories.

Table 2. Mean Ratings of Importance of Topics in Courses for Recent College Graduates

	Mean Rating Based on 5 Point Scale (n = 100)	Rank Based on Mean (n = 100)
<u>Somewhat to Very Important</u>		
Principles of marketing	3.84	1
Accounting	3.75	2
Principles of finance	3.65	3
Business in a global environment	3.63	4
Distribution	3.60	5
Sales export documentation	3.59	6
Spanish language	3.54	7
Economics of international business	3.53	8
Logistics	3.44	9
International marketing management	3.43	10
International business management	3.36	11
International financial management	3.32	12
Economic development	3.25	13
Comparative economic systems	3.10	14
Global political economy	3.09	15
Use of Internet	3.08	16
International politics	3.06	17
<u>Slightly to Somewhat Important</u>		
Other languages	2.96	18
International relations with Asia	2.95	19
Developing countries	2.91	20
Comparative politics	2.89	21
European government/politics	2.80	22
Japanese culture	2.79	23
Latin American culture	2.78	24
Japanese language	2.58	25
History of Latin America	2.54	26
History of Eastern Asia	2.47	27

The California agricultural product exporters surveyed indicated that the most important course topics for recent college graduates are functional agribusiness topics: marketing, accounting, and finance. These topics are followed by international topics, and the course topics that rate lowest in importance are those concerning specific regions of the world.

Executive Discussion Group

While the survey of agricultural product exporters is quantitative primary research, the executive discussion group is qualitative primary research. The executive discussion group research involved members of the Advisory Council to the Agribusiness Department and departmental faculty members. The Advisory Council represents different commodity interests: rice, cotton, perishables (fruits and vegetables), nuts, and dairy. Job titles include Chief Executive Officer, Vice-president of Marketing, Administrative Assistant to the President, Owner-Operator, etc. Most members of the Advisory Council have experience in international agribusiness.

First, the authors provided background on the evolution of the current curriculum, some facts and figures on the international dimensions of agribusiness, and the survey research results. Then the group was asked to write a response to the following prompt: "For curriculum planning purposes, I define International Agribusiness as ____." The discussion and written response to the prompt elicited comments including the following:

... across all national boundaries and requires an integration of multicultural, political and economic skills.

...It should also examine the effects of currency fluctuations, distribution obstacles, and tariff and trade barriers on trade, as well as the impact of culture and the art of negotiation in completing any successful transaction.

To be able to communicate or conduct business successfully with both parties feeling that they are getting what they requested. Or to be able to compromise to the level that will work for everybody.

International Agribusiness curriculum should incorporate many of the subjects that are covered in the Agribusiness curriculum slanted toward international markets. The international curriculum should contain classes about cultures, negotiations, markets, and market analysis.

Communication and interaction of business transactions in a global market, relating to agricultural products and services. Expanding and developing an understanding of cultural diversity.

Following the written response and a discussion period of about an hour, these themes surfaced:

The art and skills of negotiation are crucial in the international arena.

An understanding and appreciation of different cultures is vitally important in conducting business internationally.

The curriculum should be internationalized in all its aspects, and internationalization should not be the purview only of concentration courses. In other words, curriculum core courses in economics, marketing finance, policy, and personnel management should all incorporate international concepts and examples.

The third point is corroborated by *Internationalizing Business Education - Issues and Recommendations by Leading Educators*, a 1991 report of the Michigan State University Center for Business Education and Research. Cavusgil et al. make the following observation: "The internationalization of business schools and faculty is an ongoing process that becomes complete when educators no longer distinguish between "domestic" and "international" business. Internationalization is achieved when concepts, methods, and pedagogies are developed and taught in the global context" (p. 3).

In concluding the executive discussion group effort, both faculty and Advisory Council members were asked to rate a number of courses as to importance for inclusion in an undergraduate international agribusiness concentration. The rating was based on the following scale, where: 10 = Extremely Important, 8 = Very Important, 6 = Somewhat Important, 4 = Not Very Important, 2 = Not At All Important.

The course descriptions were drawn from the secondary data, domestic and foreign university catalogs for undergraduate and graduate (mostly MBA) programs. Some of the course descriptions were overlapping or duplicative. The participants in the rating process understood that an undergraduate concentration would be limited to six to eight four-unit (quarter system) courses. The mean ratings by faculty and a comparison of the resulting rankings by the faculty and by the Agribusiness Departmental Advisory Council are contained in Table 3.

It is interesting that for the most part both groups had similar rankings. The most divergent were "export documentation," which the faculty ranked as ninth while the industry representatives placed it as twentieth, and "agricultural trade and investment," ranked eighth by faculty and sixteenth by industry.

Program Design

The next step in the process was for the department curriculum committee to examine the results of the situation analysis and consider whether to move forward with a concentration proposal. After analysis of the research results and discussion, the committee decided to develop a

Table 3. Relative Importance of Courses in an International Agribusiness Concentration

Course Name	Faculty Mean Rating 10 Point Scale	Faculty Rank	Advisory Council Rank
Cross-Cultural Communications and Negotiations	8.82	1	1
Agribusiness Trade and Policy	8.38	2	2
International Distribution and Logistics	8.12	3	5
The World Economy	7.76	4	10
Trade Finance and International Trade	7.63	5	4
Issues in Competitive Advantage/Global Competitive Advantage	7.29	6	6
Economics of international Business	7.06	7	3
Agricultural Trade and Investment	7.06	8	16
Export Documentation	6.94	9	20
Case Studies in International Trade	6.82	10	8
Global Marketing Strategy	6.71	11	9
World Ag Resource	6.71	12	13
International Banking and Financial Mgt.	6.59	13	14
Comparative Management/Comparative Economic Systems	6.47	14	7
Language Training in International Business	6.35	15	17
Business Global Environment	6.35	16	12
Multinational Business Mgt./Global Enterprise	6.25	17	11
Information Systems in International Business	6.12	18	19
Global Political Economy	6.12	19	22
International Competition and the Multinational Enterprise	6.00	20	15
International Law	5.88	21	18
World Food, Population, and Poverty	5.29	22	24
Japanese Business	5.29	23	23
Agricultural Development in Less Developed Areas	5.25	24	26
Spanish Language	5.06	25	27
Multinational Industrial Relations/HRM Countries	4.94	26	21
Tax Aspects of International Business	4.82	27	28
Japanese Language	4.47	28	29
International Mergers and Acquisitions	4.47	29	25

Table 4. International Agribusiness Concentration

AGB 307 <i>World Food Economy</i>	4
AGB 318 <i>Global Agricultural Marketing & Trade</i>	4
AGB 323 <i>Agribusiness Managerial Actg</i>	4
BUS 302 <i>International and Cross Cultural Management</i>	4
AGB 422 <i>Logistics in Global Agribusiness</i> or FIN 430 <i>International Business Finance</i>	4
AGB 451 <i>Strategy and Cases in International Agribusiness</i>	4
Area Study Concentration Elective ²	4
	28

²Area Study Electives are to come from approved courses in Anthropology, History, Humanities, and Foreign Languages.

concentration and present it to the full faculty. They designed the proposed concentration from existing or new courses, incorporating the courses and subject matter content indicated by the research. The 13 topics top-ranked by faculty and 11 of the 14 topics top-ranked by industry are included in the six courses required for the concentration (See Table 4, International Agribusiness Concentration).

The three top-ranked topics from the survey of agricultural product exporters—marketing, finance, and accounting—are in the core of the curriculum. Nine of the next eleven most important topics are included in the new concentration. (Note that AGB 323 Agribusiness Managerial Accounting, while not included in the course ranking (Table 3), is in the concentration so that its construction parallels that of the existing four concentrations, where an applied agribusiness accounting course is required).

In departmental discussions, it was noted that while “export documentation” is important, proficiency requires considerable study and understanding of detail. Such study is probably best left to on-the-job training and to the international business education and training conducted in California by many community colleges under the auspices of Centers for International Trade Development (CITDs). The CITDs are a public-private partnership to provide a variety of export and import services and education to California businesses. The Advisory council appears to agree, since it ranked “export documentation” twentieth.

All of the other top ranked areas are covered in the courses selected and developed. It should also be noted that there was little disagreement as to the bottom ten to fourteen topic areas. Neither group saw country-specific topics or specific narrowly focused courses, such as law or taxation, as sufficiently important to rise to the top of the rankings.

Summary

Participation by industry leaders in the design of the concentration, along with the congruence of industry and faculty opinion as to its content, have resulted in a curricular package that can be supported by both the academy and industry. The use of both secondary data and two primary research samples provided convergent validity for the curriculum committee’s decision to propose an international agribusiness concentration. The primary research also assisted in developing the course content and structure of the concentration. The ranking of course topics by the faculty and by the advisory council agree with those of the agricultural product exporters—broader topics in international agribusiness are more important than region-specific topics or courses with a narrow focus, such as taxation and law. The results of the survey of California agricultural product exporters are similar to the AGRIMASS findings that agribusinesses expect and assume that

graduates operate ethically and have strong communications skills. Regarding curriculum content, they first want employees who have an excellent grounding in the functional areas of agribusiness—finance, marketing, and accounting—and then, secondarily, the specialized expertise that a concentration in international agribusiness offers.

However, curriculum design is only one part of developing successful programs in international agribusiness. In addition to the theory and practice of international marketing, negotiation, and world capital markets, meaningful internships are needed to complement classroom teaching. As stated by Litzenberg and Schneider (1987, p. 1035), “If international agribusiness is to become an integral part of agricultural economics, it will take a strong commitment and financial support from private industry and federal and state governments. The academic community cannot do it alone.”

Literature Cited

- Blank, Steven C. 1985. A Decade of Change in Agricultural Economics Programs, 1975-84. *Western Jour. of Agri. Economics* 10: 375-81.
- California Department of Food and Agriculture. 1995. *Agricultural Export Directory, 1995-96*. Anaheim, CA: Database Publishing Co.
- Cavusgil, S. Tamer, Michael G. Schechter, and Attila Yaprak. 1992. *Internationalizing Business Education—Issues and Recommendations by Leading Educators*. Center for International Business Education and Research. East Lansing: Michigan State Univ.
- Henderson, Dennis R., and Charles R. Handy. 1994. *International Dimensions of the Food Marketing System in Food and Agricultural Markets*. Washington, D.C.: National Planning Association. 166-195.
- Larson, Ronald B. 1996. *Agricultural Business Management Curricula*. *Jour. of Agribusiness* 14 (Fall): 143-55.
- Litzenberg, Kerry K. and Vernon E. Schneider. 1987. *Competencies and Qualities of Agricultural Economics Graduates Sought by Agribusiness Employers*. *American Agr. Economics Jour.* 69: 1031-36.
- Norusis, Marijs. J. and SPSS, Inc. 1995. *SPSS® for Windows™ Base System User’s Guide, Release 6.0*. Chicago: SPSS, Inc.
- USDA Economic Research Service. 1999. *Agricultural Outlook, January/February 1999*. Washington, D.C.: USDA.