

action and improvement; livestock production and feeding experiments; sugar cane and rice production; and commercial production of vegetables, dairy, coffee, sugar, and other commodities.

Two days were assigned for students, accompanying extension agents, to visit local farms. This proved to be a very important part of the visit in that the students observed a greater variety of farming operations of various sizes and speciality crops, and directly observed the role of the extension specialist at the farm level.

In addition to the direct study and application of new and established technology in a tropical environment, the students experienced traveling, studying, and consulting in a Spanish culture. This was particularly good training for the high proportion of the students whose lifetime goal is work in international agriculture.

Periodically during the tour of Puerto Rico, the students and faculty discussed the recommendations made earlier in class for specific sites and revised these recommendations based on on-site assessment of physical and human resources. Another discussion session was held after the tour of Puerto Rico to determine modifications in course conduct and tour itinerary for subsequent years.

Course Evaluation

The students were very enthusiastic about the course, giving it an overall rating of 9.5 of 10. All the students felt the course developed their ability to study independently and apply subject material, and to integrate their disciplines with other subject matter areas. One student stated that "exposure to a whole series of concepts and sources was among the most valuable assets of IntAg 498, and of my training at Penn State thus far."

The value of the trip to Puerto Rico was also rated high by all. As one student commented, "Vincente-Chandler was a great way to end the trip. I especially enjoyed the coffee day at Maricao, the day with the sugar cane extension specialist, and talking with the vegetable farmer whom we met at Rio Piedros. Learning more about the various fruits and vegetables is also good exposure to what tropical agriculture is all about."

Because of the enthusiasm of the students and faculty, the course will be repeated. The feelings of all are summarized by one student, who said, "This course was a long time coming. I consider myself fortunate to have been in an experimental class with so much give and take. We all worked very hard to get where we did and next year's class should be able to improve even more. The approach was unique and something very valuable for undergraduate and graduate students to get them out of the typical lecture mode and thinking on their own."

Since completion of the class, the students have been in close contact with the instructors. They have shared articles which they encountered relating to their Puerto Rican experience. Those still on campus served as recruiters for the following class, and several graduates sought further international experience.

Kuhns² suggested that courses should strive to disseminate knowledge, stimulate good thinking, and develop lasting interest. This course meets all three of the objectives. In an informal survey via telephone of five other land grant institutions offering a comparable course in international agriculture, it was learned that while most institutions are using the lecture-discussion format some novel alternatives are being attempted. Perhaps this article will prompt other instructors to share their experiences.

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INTERNATIONAL STUDENT: What Do They Perceive As Academic Need?

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Introduction

The international student has long been a significant part of the student body in Colleges of Agriculture in the United States, and there appears to be a continuing strong demand for training of these students, particularly at the graduate level. During the period 1970-71 to 1977-78, the average annual rate of increase in the number of international students studying in the United States has been 12.8 percent (*Yearbook of Higher Education*, 1979-80). Although this increase is for students in all disciplines, the demand in the agricultural disciplines is strong.¹ In a study of agricultural economics for the period 1974-75 to 1977-76, Stevenson found the percentage of international students funded by U.S. sources declined 16 percent, but the number of international students studying agricultural economics increased 260 percent. It seems reasonable to assume that this strong demand for the services of Colleges of Agriculture is likely to continue into the future, but it will not be without its problems.

The role of the land grant university in the United States is currently discussed in terms of a new dimension: international programs (Kussow). Whether this becomes explicit or remains an implicit dimension of the land grant university's role, Colleges of Agriculture are, and will continue to be, faced with two potentially divergent needs. They must maintain for domestic students programs which have the course content expected of the

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various disciplines, and at the same time they are expected to provide for international students programs which are professionally rigorous while providing training relevant to the work environment in the students' respective countries. The educational process for international students entering agricultural institutions of higher learning is further complicated by a frequent lack of agricultural background and a significant probability that the student may eventually fill a bureaucratic position when he returns home.

The Problem

While studying factors that negatively influence the academic performance of international students, Knudsen identified among the factors relevant to this discussion (1) lack of a comprehensive international education policy and specific means for policy implementation and coordination and (2) lack of an international professional development dimension in faculty development programs. This may lead to perceived educational objectives for the students' program which differ depending upon the person or administrative unit involved: student, academic advisor, U.S. university, sponsoring agency, or home government. This divergence of views is substantiated by Putman. The findings of Spaulding and Flack support the supposition that the variance in perceptions is further complicated by an apparent lack of communication among the various agencies and individuals involved. Most U.S. universities see graduate study as preparation for research and teaching, but the purpose of the sponsor may be to educate planners, managers, and administrators for educational and governmental institutions.

Table 1. Ranking By Category and Degree of Fulfillment of International Students' Educational Needs as Perceived By Selected International Students, Faculty, and Administrators, NMSU, 1980 (N=45).

Category	Students			Faculty			Administrators		
	Adequate	Partially	Not Met	Adequate	Partial	Not Met	Adequate	Partial	Not Met
Completeness of Program (i.e. academic and nonacademic)		A-1*		A-1					A-2
Program Flexibility			A-2			A-3	A-3		
Coordination of Advisement Throughout Program		A-3			A-6			B-1	
Review of Financial Assistance		A-4			D			D	
Specific Degree Information on Diploma			A-5		D			C-1	
Management Skills Training		A-6			A-5			A-1	
Fundamentals of Academic Discipline	A-7				D			A-6	
In Country Research			A-8		A-4			B-3	
Involvement of Students in Department Activities		A-9			D			D	
Practical Training			B-1		A-2			A-4	
English Language Training			B-2		D			A-5	
Educational Orientation			B-3		D			D	
Professional Contact After Degree			B-4		D			C-3	
Contact With Faculty		B-5			A-7			B-2	
Participation in Professional Societies		B-6			D			D	
Direct Contact With Sponsoring Agency		C-1			D			D	
Annual Report From Home Country Project		C-2					B-3	D	
Personal Needs		D			B-1			D	
More Courses in International Agriculture		D			C-1			C-2	
Understanding the United States		C-3			B-2			D	

* indicate whether respective group considered the category very important (A), important (B), or less important (C), or did not indicate that category on their list (D) and the respective rank (1, 2, 3 . . .) within that classification.

Given that (1) differences in opinions and perceptions concerning students' programs most probably existed and that (2) these differences may affect substantially the performance and successful completion of a student's program, efforts were undertaken at New Mexico State University (NMSU) to identify these differences. An awareness of these differences would lead to correction of major problems and would facilitate the development of relevant programs of study for international students. Two related but separate activities were undertaken to provide insight into the factors which may affect academic programs undertaken by international students. The results of these activities are reported here.

Procedures

Symposium

A nonrandom, stratified sample of international students, administrators, and faculty were selected to participate in a symposium for the exchange of ideas concerning the programs and plans of study for international students at NMSU. The symposium was supported in part by a grant from the National Association for Foreign Student Affairs (NAFSA).

The participants were selected on the basis of the following criteria. Size of the group was restricted to encourage participation by all and to promote interaction among the three groups. Students were selected to maximize the number of disciplines represented while insuring that all geographic and cultural areas were represented. Faculty were selected to insure participation from departments currently having a large number of international students, thus maximizing the number of advisors

or potential advisors in attendance. Administrators were chosen due to their potential impact on policies related to student programs: Dean of the Graduate School, Dean of the College of Agriculture, and selected department heads.

The symposium was structured to allow the participants to exchange ideas and perceptions as they worked toward developing a hierarchy of educational needs for international students. In addition each group was asked to indicate the degree to which their needs are currently met at NMSU. It was hoped that this activity would illustrate any real and perceived differences among the three groups and would form the basis for future action and programs.

Student Survey

Contiguous and complimentary to the symposium was the thesis research undertaken by Jose S. Cortez. Cortez studied the "degree of importance, satisfaction, and adequacy of information international students receive about NMSU educational facilities, opportunities, and services" (Cortez, p. 12). Included in the study were the role of academic advisor, student participation in planning of degree program, class activities, work experience, and preparation for return to home country. This study was conducted upon a stratified, random sample of international students at NMSU, and the results were presented in a plenary session to the participants of the symposium.

Study Results

Symposium

Each of the groups — students, faculty, administrators — prepared a list of educational needs which their respective group perceived as very important, important, and less important and indicated the degree to which they felt these needs were being met by their educational program at NMSU. The results of this listing are presented in Table 1. Three conclusions are apparent from these data. The students perceived a larger list of educational needs than did the faculty or administrators. There is, however, a degree of consistency within the ranking of those needs which are common to all groups. Students indicated that 39 percent of those needs which they enumerated were not being adequately met; faculty indicated 18 percent and administrators 8 percent.

One might reasonably expect students to list more needs. Since they are the central persons of their respective programs, they see all facets of the programs. The other two groups tend to have a more limited view of the respective programs and different vantage points, logically resulting in the smaller number of items listed. What is more interesting, and discouraging, is the fact that of the actual number of categories they listed, students indicated a significantly larger number were not being met.

Of the needs rated by students as "not met" at least four — program flexibility, in "home" country research, practical training, and educational orientation — appear

to be directly related to the content and functioning of a student's program. This is important since the educational program will directly affect the quality of the professional training which the student takes home. Faculty can, however, take immediate and active roles in correcting or ameliorating these deficiencies.

Student Survey

The Cortez study provides additional insight into the students' perceptions of their educational program. Table 2 contains seven questions from the study and indicates the level of importance which the students placed upon each item. Table 3 shows how satisfactory or adequate students rated NMSU's responses to the items contained in Table 2. The results contained in Table 3 point to three deficiencies which appear to be immediately addressable by faculty in a College of Agriculture. Students are asking for instruction which provides them the opportunity to relate their academic program to the problems of development which they will face when they return home (24 percent) and the opportunity to discuss these problems (73 percent).

The need for work experience or practical training, which 88 percent of the students indicated was important, was rated as inadequately met by 47 percent of the students surveyed.

The opportunity to attend off-campus professional meetings is rated as very unsatisfactory by 67 percent of the respondents. Given the emphasis placed upon this activity for themselves by faculty and administrators, it is unfortunate that this situation has been allowed to develop for students.

Table 2. International Student Responses to Importance of Various Aspects of Their Academic Experience at NMSU, Fall Semester 1979.

	Very Important	Important	Unimportant	Very Unimportant
How important for you is the <i>role of your academic advisor</i> ?	27	13	5	4
How important is it for you to <i>include academic training for introducing change in your country</i> ?	22	17	6	4
How important is it for you to <i>share responsibilities in planning your degree program with your academic advisor</i> ?	34	10	3	2
How important is it for you to <i>participate in seminars with students from several departments or colleges to deal with problems of international development</i> ?	25	19	4	1
How important is it for you to <i>discuss course work with the professor</i> ?	28	21	0	0
How important is it for you to <i>attend off-campus professional meetings</i> ?	21	22	4	2
How important is it for you to <i>have actual work experience in your field before returning home</i> ?	36	7	3	3

Source: Cortez, Jose Simon, "International Students' Academic Attitudes and Needs Toward A Cross-Cultural Adjustment at New Mexico State University," unpublished M.S. thesis, New Mexico State University, Las Cruces, New Mexico, December 1980.

Table 3. International Student Satisfaction with or Adequacy of Response to the Needs of Their Academic Experience, Fall Semester 1979.

	Very Satisfactory	Satisfactory	Unsatisfactory	Very Unsatisfactory	Percent
How satisfactory is the help you are receiving from your academic advisor	24	20	3	2	10
What is your degree of satisfaction with the academic training toward introducing change in your country	5	32	9	3	29
How satisfactory is it for you to share responsibilities in planning your degree program?	18	26	3	2	10
What is your degree of satisfaction with the current amount of participation in seminars with students to deal with problems of international development?	2	11	28	8	73

	Very Adequate	Adequate	Inadequate	Very Inadequate	Percent
How adequate is the opportunity that you have to discuss course work with professors?	11	33	3	2	10
How adequate are the opportunities that you have to attend off-campus professional meetings?	6	10	21	12	67
How adequate are the opportunities for working experience in your field?	9	17	11	12	47

Source: Cortez, Jose Simon, "International Students' Academic Attitudes and Needs Toward A Cross-Cultural Adjustment at New Mexico State University," unpublished M.S. thesis, New Mexico State University, Las Cruces, New Mexico, December 1980.

Discussion and Conclusion

International students feel that a range of their educational needs are not being met by current programs. To remedy the inadequacies will require the cooperation of all groups concerned: students, faculty, and administrators. Results of the two programs reported here point to at least three areas where immediate progress may be made. The international student is requesting more development oriented materials in his program. These may be supplied through special courses, seminars, and additional materials in existing courses. In many instances the addition of international material could make existing courses more interesting and stimulating for domestic students, and it could broaden their perspective on agriculture in general.

The opportunity to attend off-campus professional meetings seems necessary and easy to correct. For many students the time in the United States represents their first and perhaps only convenient opportunity to integrate themselves into the professional community of their discipline. Some faculty attend professional meetings each year, and most student's financial sponsorship allows for compensation for this type of activity. It would

appear, therefore, that students need adequate information about meetings and assistance in overcoming their reticence in asking for help in arranging attendance and in participating once they have arrived at the meetings. Additional assistance in arrangements, such as transportation on a group basis, may improve the level of student participation and may generally be accomplished under departmental sponsorship. Although College of Agriculture field days would not constitute professional meetings, involvement in them would also correct some of the lack of professional involvement which these students perceive.

Practical work experience may be the most difficult to accomplish, but it is not impossible. The greatest difficulty will be finding companies, organizations, or farm families willing to take students for this activity. It has its costs but contains important benefits. These students represent future contacts which would be desirable.

Although the continued increase in international student enrollment in Colleges of Agriculture seems to indicate basic satisfaction with the programs provided, there appear to be areas in which Colleges of Agriculture could improve the quality of the programs and service which they provide to international students. In undertaking this activity there will be potential for criticism that international students do not constitute the constituency for whom the College was instituted. But since they represent a significant and growing percentage of the enrollment in Colleges of Agriculture, their needs must also be addressed.

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