

for completion of the topic, however, a few will complete as many as five hours in one semester. Students on the whole have been enthusiastic about the course, though numbers are limited both by faculty load and the amount of time required of the student. This program has been neither used or thought of as a "snap" course.

From a faculty view point, the course has been rewarding. While it increases the demand on faculty time, the results have been satisfying to a degree that no one complains about the extra work.

One of the most satisfactory results of Independent Study has been the weekly seminar. This carries a one-hour credit and is required of all students enrolled in Independent Study and Problems courses. Student interest is high as they choose topics, make progress reports and finally submit their papers. Early seminars are used for instruction in research methods and procedures. The popularity of the course has necessitated limiting the number of students a faculty member can take. As a result, students make application to an instructor far ahead of registration and make every effort to convince him that they have a suitable topic for study and the drive to do independent work.

Below are a few factors which should be considered if such a program is undertaken:

1. The course(s) should be open to any qualified student.
2. Qualification should be based on the advisor's recommendation as well as grade point average.
3. The student should be free to select the topic and methods of study.
4. Meetings with advisors should be based upon student need rather than schedule.
5. Care should be taken that the student does not start a study that is too extensive to allow for depth.
6. A preliminary outline of the study submitted early in the semester is necessary.
7. Weekly seminars of students and advisors *offer an opportunity* to exchange ideas, compare methods and report progress.
8. An oral report before peers is an encouragement toward excellence.
9. After completion, papers should be made available to all students, either in the library or through the department.

<sup>1</sup>"Independent Study," U. S. Department of Health, Education and Welfare, p. 9.

<sup>2</sup>Op. cit., p. 1.

## Changing Concepts of Agricultural Education

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I would like to share with you some of the exciting developments in agricultural instruction taking place at the University of Hawaii.

We are in the midst of turmoil and conflict caused by the explosion in scientific knowledge and technology. This explosion has made the efficiency and productivity of American agriculture the envy of the world. Today one U. S. farmer can produce enough food and fiber for nearly thirty people, and indeed our nation could feed all the peoples of the world if we were willing to pay the price.

Thus it is clear that the revolution in knowledge has made it imperative for us to reconsider our traditional concepts of agricultural education. Certainly it is hard for many to understand that in these dynamic times agricultural education cannot continue to rest upon the past glories of the first one hundred years of the land-grant college system. The situation has been aptly described by Dean Earl Butz of Purdue who said "What we learned yesterday is obsolete today, what we learn today will be obsolete tomorrow!"

There are many paradoxes that confront our local students in agriculture. In a state known throughout the world for the high development of its sugarcane and pineapple industries they have received little course work or training in these subjects. Though many soon may be advising people in backward countries on agricultural development they cannot help but note that their home state does not produce enough vegetables and meat to supply its own demands. Though the development and the potential of agriculture in Hawaii are subjects for continued discussion and debate they find that the best opportunities for employment and experiences are on the mainland and in the foreign programs of the federal government.

How then, can the agricultural college guard its courses, its curricula and its students from becoming completely out of step with the changing needs of the community? What can we do about the disadvantages inherent to agricultural education in Hawaii?

Agricultural curricula are becoming more flexible to meet the needs of the individual student and his aspirations. There is a growing emphasis on providing what the student requires for

his career objectives. There is less concern for the age-old tradition that the instructor teaches *just what he wants to teach*. Courses, curricula and even departments are being consolidated in recognition of the increasing overlapping of traditional subject-matter areas.

At the University of Hawaii, the primary goals of resident instruction in the College of Tropical Agriculture are *clear* and well defined. They are to provide the student with a liberal education to acquaint him with his cultural heritage; to help him relate his work to knowledge-in-general and to train him in a profession in which he can make his living.

There are three developments which reflect our ideas for accomplishing these goals. (1) the strengthening of general education through a university-wide core curriculum; (2) the focusing on educational objectives through a practical experience facility at Pearl City; and (3) the motivation of students for international work.

Common cores in the liberal arts with firm foundation courses in the humanities and social sciences are already mandatory for all students in many institutions. This university now requires all students in the lower division or the first two years of college to obtain a common background. They have available a wide selection of courses in six general areas. These are (1) communications to provide competence in English and speech, (2) quantitative reasoning to develop the ability to understand and apply mathematics, (3) world civilization courses to provide broad comprehension of cultural development, (4) humanities to develop standards of value, beauty, and sharp critical judgement, (5) natural sciences to develop understanding of natural phenomena and of the scientific method and finally, (6) social sciences to seek understanding of human behavior.

This wide array of diverse courses in liberal education should provide concepts applicable to all phases of agriculture, concepts which will not be readily outmoded in the years ahead.

These courses can be given just as effectively at the new community colleges and at the Hilo Branch as on the main campus. They will be followed in the third and fourth years of college by specialized courses in the ten departments of the

College of Tropical Agriculture in Manoa. It will become more and more difficult for undergraduates to study agricultural specializations in depth. Such specializations will have to be provided in the graduate programs of the departments concerned. The trend is quite apparent in the College of Tropical Agriculture where today graduate students outnumber the undergraduates.

The second development involving more educational flexibility through use of a practical experience laboratory is somewhat controversial. Many feel that American agriculture is so efficient and so well developed that production experience is no longer needed. Emphasis they say, must be on training for scientific and research work. Practical experience can be thrown out the window.

Yet this attitude may not be altogether in the best interests of the student. In Hawaii the large ranch and crop production operators have preferred agricultural graduates from mainland institutions which retain strong emphasis on practical applications.

Positions as agriculturists in the Trust Islands, Samoa and other areas of the Pacific, positions as teachers of vocational agriculture, agricultural arts, horticulture; positions in the Peace Corps and the International Voluntary Service; all require a large measure of competence in "know-how". Any who are actually involved in production can appreciate the value of practical experience.

Clearly the needs of graduates planning to work in specialized research and of those intending to participate in grass-roots development dictate two tracks of experience, one highly technical and one highly practical.

The former is well provided by our agricultural instructors, all of whom are drawn from the scientific and research staff of the Hawaii Agricultural Experiment Station. But in the latter practical area, we are woefully deficient. The loss of our instructional fields to the overall university building program has only aggravated the problem. To remedy the situation, the College is developing a practical training facility on 26 acres of recently acquired land near Pearl City.

The facility will provide practice in "institution building" rather than traditional exercises in farm labor. The students will realize quickly that these institutions need not be marble structures. Rather, they can be demonstrations in the field; they can be experiments and adaptations of methodologies; they can be verifications of other work, they can be ideas in men's minds. Thus, "institution building" will require the students to plan, to take responsibility, to exercise leadership. They will accomplish this through demonstration projects on small "land laboratories" half to one acre in size. They will be organized into teams or "desks" responsible for planning and accomplishing field work, preparing budgets, buying equipment, arranging labor; harvesting and marketing. With careful scheduling of time, all this can be done concurrently with their normal curricular load.

The success of the student projects can be judged by the level of excellence of the "desk" reports and of the demonstrations in the land laboratories. But more important will be the improved capacity of the graduates to meet the challenges of their assignments and the increased competence to develop ideas and to adapt old ones to new situations.

The greatest success can be obtained with freshmen and sophomores still involved in their university core. They are new to university life and readily motivated to enthusiasm for, and involvement in student projects of this kind. By the time they have finished their core requirements and concurrent practical experience they will want to learn still more in advanced courses and laboratories. We expect their grades to rise. We expect them to continue to help and instruct new students entering the program.

The third area of interest is the development of student motivation for international affairs and overseas work. This has been referred to by Secretary of Agriculture Orville Freeman as the new fourth dimension of the land grant

colleges. The other three, you will recall, are instruction, research and extension. Indeed, many already are involved in international agriculture programs: contracts with foreign universities; curricula adapted for foreign students; courses with tropical orientations. At the University of Hawaii the enrollment of undergraduates from Africa and Southeast Asia has been steadily increasing in the past few years. They constitute an unparalleled resource for local students for information and ideas regarding the culture, education, history, current events and the agriculture of other tropical areas.

Students in the College of Tropical Agriculture interested in international agriculture have formed the "Hunger Fighters", an organization dedicated to the alleviation of hunger and poverty. Their theme is that agricultural technology by itself cannot have maximum impact in changing the habits and traditions of under-developed peoples. They believe that agricultural technology must be closely coordinated with the humanities and social sciences; with sociology, anthropology, community developments; with the history, the religions, the superstitions, the traditions of the people they are dealing with. They have two projects. The first is an inter-disciplinary weekly seminar in Pacific House. Here outstanding professors in the liberal arts, returnees from the Peace Corps, the International Voluntary Service, workers in the AID and the East West Center, all present ideas on how their particular fields tie in with the practice of agricultural development. The students thus have an opportunity to discuss in depth with recognized authorities, the many facets of cultural and technical change.

Their second project of course, is involvement in the Pearl City Facility.

A few years ago, opportunities for our agricultural graduates were limited in number. Today there are expanding futures for all: careers in science, careers in research, careers in technology, careers in agribusiness, careers in international development. But they must have strong motivation; they must be capable of developing high technical competence. Though the program we are developing may seem to be somewhat upside-down, we think that there is advantage in introducing the student, early in his career, to the problems related to planning and accomplishment of production, management and marketing. The details of the development of these ideas, of course, come later in the advanced agricultural courses.

Farmers and producers can be of great assistance to the agricultural instruction program. They can suggest ways of improving and strengthening instruction. They can serve on boards of professional farmers to advise students who learn by doing.

The Pearl City Instructional Facility will help to develop new and exciting instructional programs in tropical agriculture which, first, will recognize the realities of the world and second, will meet the challenge of the changes in the future.

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At the executive committee meeting in Kansas City on October 3, Regional Directors were asked to appoint several individuals to a membership committee, others to a Bibliography committee to abstract articles for the Journal and still others to solicit articles for publication in the Journal.

These names will be published when a complete list is available.