

'Meat For Future Agriculturists'

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For meat to be of benefit to an individual, the meat must be present in the diet and it must be fresh. So it is with agricultural technology for students. Up-to-date results and supporting evidence from agricultural research labs and plots should provide "meat" in the educational diet.

An undergraduate course in Agronomy now should include a thorough discussion on high-lysine corn. And next year, emphasis might need to be placed on utilization of high protein oat and wheat breeding stocks. "Fresh meat" for a student in Genetics might be the discussion of messenger RNA and polyribosomes. In Animal Nutrition, students may be startled to learn that ground oyster shells can substitute for a portion of the roughage in finishing rations for cattle.

Dr. Cecil Ryan drops his lecture notes in the trash can at the end of the last class meeting each semester. He develops a new set then for the next course. His students in Poultry Science at Texas A&M University can see that they have received up-to-date information. Contents of many courses in agricultural disciplines could become more challenging through a similar up-dating.

Questions pertinent to this point were raised by Dr. Darrell Metcalfe, Director of Resident Instruction at the University of Arizona. In the most recent issue of *The Journal of the American Association of Teacher Educators in Agriculture* he asked, "Should the undergraduate receive more theory and less practice?" Is the objective to teach the answers to a thousand questions or to develop the thinking power of a student and to treat his mind as a workshop not a storehouse? Are our graduates exposed to research? If they are exposed, can they interpret the research data intelligently? How can undergraduates be effective teachers if they are not acquainted with research — including the field of education?" Each of us needs to develop satisfactory answers in our daily classroom experiences to these questions.

Agriculture directors and other college administrators must remain alert constantly to opportunities for improvements in curricula and programs. In recent months, numerous local, state, regional and national conferences have focused attention on contemporary educational needs in Agriculture. Professional societies in all major agricultural disciplines have provided excellent guidelines for restructuring undergraduate curricula.

This was well illustrated for the Agricultural Education curriculum by O. E. Thompson¹. During his summary of trends in undergraduate programs he stated, "Agricultural education curricula in many colleges now include courses in occupational information, vocational guidance, and studies of off-farm occupations in agriculture. The time-honored

requirement that a student must have completed the curriculum in agricultural education before teaching vocational agriculture is gradually being replaced. Many schools now permit double majors. Others will accept students from any major as teacher candidates, for example, only ten of the forty schools surveyed held to the traditional requirement that only agricultural education majors could qualify for teaching vocational agriculture. This relaxation of requirements permits many colleges to prepare non-agricultural education majors for teaching vocational agriculture in as little as one college quarter. Undergraduate curricula in many schools are now sufficiently flexible to permit the preparation of teachers who can direct programs for students interested in occupations in agricultural business and industry, in landscape horticulture, and in other vocations for which an understanding of agriculture is essential."

Educational pressures are mounting also, for "meaty" retraining programs for instructors of Agriculture in junior colleges and secondary schools. Senior colleges and universities must furnish leadership in this area. They can provide staff and facilities for summer institutes or workshops in specific subject matter disciplines. Such workshops appear to be particularly appropriate for helping junior college personnel keep abreast of advances in agricultural technology.

All educators should be cognizant of the continual need for a "fresh, meaty" educational diet as innovations in Agricultural instructional programs affecting students are proposed and adopted. As graduates from our college apply their credentials in the "computer" of a management or professional career in Agriculture, we surely don't want the "print out" to read "You are obsolete."

¹O. E. Thompson. Trends in Undergraduate Teaching in Agricultural Education. Paper presented as part of a Symposium; NACTA and the Professional Societies. Annual meeting of NACTA, Arizona State University, Tempe, April 3, 1967.

Morale In The Classroom

by

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Recently, while counselling with a student, I asked him what he planned to do after graduation. His response was somewhat vague. In essence, I gathered that he planned to work for a government agency, or in agricultural extension or maybe for a commercial company. Knowing that this young man had a farm background, I asked him how he felt about farming. This struck a chord of genuine interest. Before I could expand upon some of the satisfactions of operating a profitable agricultural production enterprise, he took over the conversation and said, in effect, "Oh, yes, "I'd like farming — I've always wanted to run my own farm — and just as soon as I get me a good job and get settled down, I'm going to get some land and start farming on the side."

A fairly recent study of the students in Agriculture' states that the student in the College of Agriculture typically . . . "places great emphasis on the practical . . . is more interested in 'what' to do and 'when' than in the 'why' . . . lacks confidence in his own ideas, thoughts, values and evaluations. As a result, he is reluctant to participate in class beyond volunteering facts he is sure of, ideas he is certain the instructor wants, or ideas the instructor agrees with. He has a high regard for authority and sees acquiring information as a way of becoming an authority. Hence, he'll want to be told what the answers are, and what is 'right' and what is 'wrong' and what to learn because he'll become an authority once he acquires the information."

The study goes on to give some additional background typical of the freshman in the College of Agriculture. His parents were in elementary school during the depression of the thirties: about sixty-eight percent of the parents had a high school education or less, sixty-nine percent of the fathers were farming and eighty-five percent of the mothers were homemakers. In general, the agriculture freshman is the oldest child in the family, comes from a town of less than 10,000 population, spends his summers working on a farm and has graduated in a small high school class of less than one hundred graduates. He looks on college, and parents, as benign and powerful figures, feels that a college degree will enhance self-esteem and personal power, and generally tends to over-estimate the first semester grades he will make. He is energetic and motivated when working on practical problems — and when in a structured, well-defined pattern of operation or with explicit statements of what is expected.

Let us now also consider the effect of starting salaries for Bachelor's degrees in Agriculture. Many studies show that agricultural graduates start at a lower salary than graduates of the more glamorous curriculums — engineering and some of the sciences. We teachers realize that such studies frequently list starting salaries, only, and do not quote the higher salaries which agricultural graduates can attain — salaries comparable to the highest salaries in any profession, but when the undergraduate student sees the reports of starting salaries in agriculture he doesn't see much to raise his morale and his enthusiasm for his chosen professional career.

A report of a farm plan was published recently² which showed that one farm operator, using a minimum (less than one man-year) of hired labor could expect to receive returns to his labor and management of \$17,000 per year. Here is a figure which should raise the student's morale considerably. Granted, he will have to learn to manage 440 acres of Texas land, \$294,000 worth of capital and \$42,000 of annual operating expenses. We should, however, be teaching him to do these things, or at least to have confidence in his ability to do them. This example is based upon the best estimates of production from the best practices of managing the land, labor, capital and climate of the specified area. In every area there are undoubtedly examples of actual operations which are equally illustrative of how high incomes can be attained from proper management of valuable resources if an operational

unit of efficient size is achieved.

Regardless of the area in which the agricultural graduate eventually finds a career, whether, he is to be a salaried employee or a free enterpriser, his training should include, for morale purposes if nothing else, the development of the belief in the student that management of an economic agricultural production enterprise offers a career equally as profitable as any of the specialized businesses, scientific or advising careers in agriculture or in any other discipline. It is difficult to visualize a scientist or an advisor who has a \$6,000-a-year concept of a typical farm operation giving constructive support to farm operators who have a \$15,000-a-year potential.

In view of the background and attitudes of the freshman student of agriculture which are cited earlier in this article, it seems that the building of student morale—the development of self-confidence—the development of a broader vision of agriculture—the definition of a big problem into which he can fit his search for "what," "when" and, under our direction, "why" are the greatest needs of the student and should be our primary objectives. Adding a course in confidence-development, or morale-enhancing would probably be a waste of time. Individual counseling would probably be equally ineffective unless the courses in the student's curriculum supported the development of his confidence. All courses should include "morale-building" as a major objective. Especially should the "beginning" courses include this objective, for it is here that the student will likely first obtain the needed incentive to learn and apply the more complicated "whats," "whens" and "why" to be found in the advanced courses.

Here is a fairly simple classroom technique which has stimulated student interest in the classes of the author: For the sake of illustration we may exaggerate slightly, but a particular practice, e.g. crop fertilization or variety selection, is presented on a total farm basis rather than on a "per-acre" basis. A farm operation budget—as realistic as the instructor can visualize, but showing an annual return to management and labor well above the GS-5, GS-7, or anticipated starting salary with commercial company—is shown to the class and used as a basis for the teaching point to be covered. This can often be merely the per-acre figure multiplied by the number of acres one operator could be reasonably expected to manage. But, the budget should show a breakdown of all factors of input—land, seed, fertilizer, livestock, equipment, etc. At first, these budgets were hypothetical, but the story of a real success is more convincing if the net returns are high enough. A net return in the range of \$12,000 to \$18,000 annually is usually sufficient to arouse the interest of most students, and in their efforts to prove why it won't work, the students do a lot of learning.

A single course in "budgets" in the curriculum would probably not be totally effective, although a completely interdisciplinary course, early in the curriculum might have considerable value. Rather, that part of all courses in agriculture which is applied science and management might well be presented in this context. The learning points are the

same as if taught on a per-acre or per-animal basis, but the impact on the student is greater if taught in the total farm context. The interdisciplinary relationships of an interdisciplinary agriculture would in many cases become much more real if instructors in all disciplines were to use this technique.

Two objectives seem to be achieved by the use of the total budget as the vehicle. First, is the creation of interest which makes the teaching of the subject matter easier and more effective. Second, and probably more difficult to define, is the enhancement of the morale of the class—the development of a pride in agriculture and a confidence in their ability to contribute to a more efficient and productive agriculture. The class members come to realize that they cannot all become farm operators, but the potential researchers, sales managers, credit managers, processors, and management advisors develop confidence in the ability of the operator to put their professional services to productive use.

This technique is not proposed as a panacea for all the ills of agriculture. Rather it is intended to be a relatively simple technique to help students make the changes necessary to move from the agriculture many of them already know to the agriculture they will most certainly be participating in. It should help those who came from the eighty percent of the farms which produce twenty percent of the nation's production to become one of the twenty percent who produce eighty percent of the production.

¹ Attitudes and Ambitions of College Students. Bulletin 479. Kansas Agricultural Experiment Station. January 1965.

² Farm Index, Economic Research Service, Vol. V No. 12. USDA. December, 1966.

Counseling the Top 10% of High School Students

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Central Missouri State College employs a number of methods to try to encourage the upper 50% and particularly the top 10% of the high school seniors within the college district to choose this school for their higher education.

When the subject of off-campus counseling is discussed, generally the first comment will be, "We have more students now than we can properly teach. Why encourage more students to enroll?" I think that most colleges find themselves in this situation.

Most college officials realize that leadership for the various organizations on campus should, and most generally does, come from the more scholastically inclined students. This being true, each institution of higher education strives to get its share of outstanding seniors from the various high schools within the college district. Central Missouri State

College enrollment has increased from 2,549 in 1957 to 11,080 in 1967. The total enrollment figure includes 9,629 students on campus at Warrensburg and 1,451 students at the College's Jackson County Residence Center in Independence, Missouri. Still, the administration and faculty think it necessary that some off-campus counseling be done.

All high schools in Missouri are required to administer various tests to the graduating seniors in April and May prior to their entering college the following Fall. At present, the School and College Aptitude Test and the Missouri College English Placement Test are required for entrance to Central Missouri State College. Class rank is determined entirely by marks or grades made by each individual student and are calculated by the school officials. Missouri high school seniors ranking in the upper two-thirds of their graduating class are admitted in good standing. The schools in our college district have cooperated in sending the class rank and test scores on the various required entrance tests to the College. Those ranking in the lower one-third may be admitted to CMSC only on scholastic probation. In order for the student who is on scholastic probation to continue beyond the first term, he must earn a 1.0 or above. During the second term, this student must earn a 2.0 (C average) or have a cumulative average of 1.5 or above to be eligible to continue. By this procedure practically every graduating senior from our high schools is given an opportunity to enroll in college. It is apparent that all high school seniors cannot do college level work; but since our colleges are state supported, it seems evident that high school graduates should be given a chance to attend state colleges.

Dr. Harold L. Young, Director of Field Services, Central Missouri State College, is responsible for all field service at the college. Dr. Young was chosen to fill this position because of his wide range of successful experiences in Missouri public schools before joining the college faculty. He has served as classroom teacher and administrator; prior to assuming his present duties he was area Supervisor of Instruction for the State Department of Education. The Director has implemented a number of programs for reaching prospective students. Some off-campus counseling is purely incidental. Among the planned activities the following have proved to be particularly effective:

(1) Career Day

Career days are held by many high schools. They provide a situation in which representatives from practically all career areas and higher learning institutions are invited to the particular school. The counselor usually organizes a rotating system through which a student may hear a representative from the college or career discuss the advantages, disadvantages, cost, requirements for entrance, and many other items of interest to the student. Of course, this type of high school activity gives the student a chance to visit personnel from the various occupations which would probably not be possible otherwise. We really have no way of knowing just how effective this procedure is in informing students or just what percentage eventually enroll in a given institution, but the career institutions and