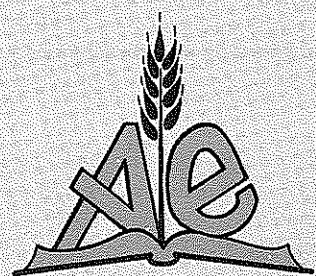


Theme — Agricultural Products
Preparing Agricultural
Processors



AGRICULTURAL eDUCATION

Volume 49

Number 11

May 1977

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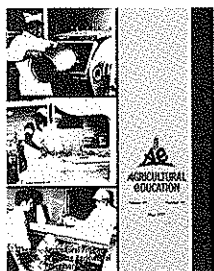
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Top Photo: A student at Morrisville College, N.Y., loads cream into the churn for processing butter. (Photo courtesy of W. R. Sliva, Morrisville College). Center photo: Meat processing students at Laredo, Texas, bone beef. (Photo courtesy of Gerardo Sepulveda, Laredo).

Bottom Photo: David Gresham, 1974 Georgia state winner in Placement Processing, sells sausage to a customer. (Photo courtesy J. E. Dunn, Ga. Assoc. FFA).

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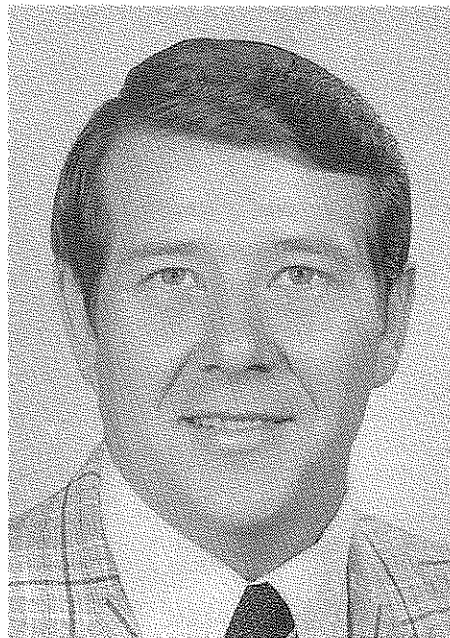
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AGRICULTURAL COMPETENCIES AND FOOD PROCESSING



Lloyd H. Blanton

Three questions are addressed here:

- (1) *Are there food processing occupations requiring agricultural competencies?*
- (2) *What criteria should determine which occupations justify vocational agriculture dollars for food processing curricula?*
- (3) *What are the agricultural competencies which food processing workers need?*

FIRST QUESTION

Question one sounds like heresy to those quick to commit vo-ag resources to every enterprise even remotely associated with food. There are some who have—in eagerness and optimism—promised too much; too many vo-ag teachers have been “volunteered” by others to do the impractical, if not the impossible, for schools and society.

To these persons, I ask this: Are training funds currently adequate to ensure a work force to produce food for the future? Food must be produced for 300 million Americans in the dawn of the 21st Century. Can existing programs guarantee a productive work force adequate to that challenge? If not, the first priority is to turn curty to the task of training for occupations requiring extensive use of agricultural competencies.

However, a few food processing occupations require agricultural competencies.

According to a recent study involving extensive use of agriculturists, food processing occupations and industries using significant numbers of ag competencies are small in number.

Furthermore, most of these occupations require training in universities and technical colleges—beyond most vo-ag capabilities. Of the 201 sectors, only nine food processing industrial sectors require *some* agricultural competencies; of 441 occupational categories, only six require ag competencies in food processing industries. (See Table I.)

Lloyd H. Blanton
Teacher Educator
Clemson University

TABLE I
Food Processing Requiring Agricultural Competencies*

By Occupation	By Industry	ERS Code
Agricultural Scientists	Meat Products	268
Veterinarians	Dairy Products	269
Biological Technicians	Canning and Preserving	278
Millers: Grain, Flour, Feed	Grain Mill Products	279
Meat Cutters and Butchers	Beverage Industries	289
Fishermen and Oystermen	Misc. Food Preparation	297
	Food and Related Products	527
	Federal Public Administration	917
	State Public Administration	927

* Source: Economic Research Series (ERS), USDA Cooperating with Bureau of Census, Office of Education and Bureau of Labor Statistics. *Employment in Agricultural and Agribusiness Occupations*. ERS-570. September, 1974.

The majority of food processing occupations requiring agricultural competencies are those that could benefit, certainly, from the vocational agriculture program, particularly if the program emphasized agricultural competencies for foodstuff buyers, graders, and merchandisers. With relatively few exceptions, retort, sealer, and packaging machine operators ought to be trained by someone other than vocational agriculture.

SECOND QUESTION

This leads to the second question listed above in paragraph one. Answers are predicated upon the belief that free enterprise can, with well educated workers, recognize and meet these challenges:

- (1) Produce desirable food materials — abundantly, timely, economically,
- (2) Package foods for delivery to individuals — wholesomely secured, optimumly sized,
- (3) Deliver wholesome foods to individuals — abundantly, timely, economically,
- (4) Deliver the equipment, capital, chemicals, facilities, and service required by producers, nutritionists, and processors to ensure production and delivery of wholesome, economical food materials.

Obviously, agricultural competencies are required to achieve the four challenges. But, not every worker requires agricultural competencies to do the job.

(Concluded on next page)

Before vocational agriculture resources are committed to secondary programs for food processing, the following questions should be favorably answered:

- (1) Which occupations in the industry require the following?
 - (a) Personal contact with producers (farmers and ranchers)
 - (b) First-hand, current knowledge of food materials' wholesomeness — criteria for selection and/or purchase
 - (c) Ability to communicate with producers and consumers using accepted terminology and media
 - (d) Knowledge of the inputs used in production, marketing, and distribution of food materials
- (2) Will employment opportunities match trainees' skills and aspirations within criteria above?
- (3) Will competition for program resources and available manpower reduce the overall effectiveness of the vocational agriculture program?
- (4) What will be the policies and procedures for establishing and maintaining appropriate quality for the program?

THIRD QUESTION

Question three calls for identification of competencies for vocational agriculture programs in food processing.

Lest the importance of managerial competencies be overlooked, every worker in an organized business needs knowledge of these internal organizational factors:

- (1) Goals-of-the-firm behavior
- (2) Quality of entrepreneurship
- (3) Information assembly and evaluation
- (4) The control mechanisms of the firm

Within those lie the seeds of success and failure of an organization. Every worker has a stake; every management action affects the outcome.

In illustration, numerous studies and indeed common observation reveal that price does not necessarily determine product acceptability. The salesman who can "talk his client's language"; the delivery man who puts in a little extra to "be on time"; the buyer who recognizes the "effort and care of the farmer during production"; or the bookkeeper who "understands the producer's recordkeeping system"; all contribute to the overall quality of the product.

In short, the competitive edge is not merely a matter of economics; it's a (1) philosophy, and (2) commitment to service plus other intangibles that are worthy of development in vocational training.

The other portion of competencies include development of knowledge, judgment and physical skills. They occur in both the managerial and manipulative areas.

As in all vocational curricula, resources used for training in food processing occupations must be based upon the total competencies required for successful employment:

- (1) Career awareness
- (2) Personal development and relations
- (3) Safety
- (4) Industry terminology
- (5) Criteria for food-material quality

- (6) Economics
- (7) Mechanical technology
- (8) Marketing technology
- (9) Industrial organization
- (10) Communications — personal and mass

South Carolina's only specialized processing course, in a multi-teacher program, is the logical next step for students who generated interest in meats during studies in the first two years of the production agriculture curriculum. The managerial and manipulative competencies are based upon the curriculum elements listed above. The curriculum is an extension of the traditional program, not a competitor.

Food processing is an integral part of the food system. Vocational agriculture should ensure that occupations requiring key agricultural competencies are acquired by food processors. Deliberate curriculum planning, not competing with limited vocational agriculture funds, is advocated for food processing occupations. ◆◆◆

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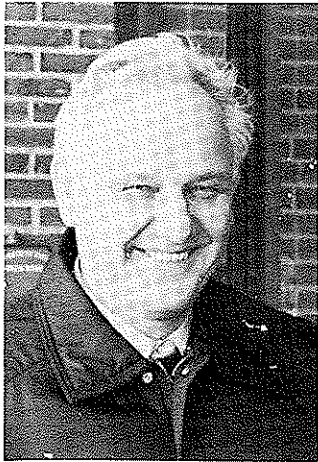
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COMING ISSUES

COMING ISSUES



William R. Sliva

PREPARING DAIRY TECHNOLOGISTS

by
William R. Sliva
Professor of Dairy and Food Science
State University Agricultural and
Technical College
Morrisville, NY

Everyone in agriculture knows of the rapid evolution occurring in the production of foodstuffs. This same dynamic change has also affected the agricultural services. Dairy technology, the handling of milk from the production stage to the ultimate consumer, is one of these services.

In the 1930's and 1940's, small dairy plants were located in just about every town. Pasteurization and bottling of milk at that time did not require much technical training. Off the street employment was common practice throughout much of the industry. Gradually, because of economic factors, dairy plants began to merge to become the large dairy plant complexes we have today. The small dairy plant with 5,000 quart/week capacity has given way to plants that process one million or more pounds of milk per day.

MODERN CHANGES

The need for efficient management, production and quality control, and increased consumer demands have forced the dairy industry to move out of the horse and buggy days. The old barn inspector is now a qualified milk sanitarian, able to read blueprints and oversee proper milk house construction, familiar with sophisticated dairy equipment, able to interpret various laboratory tests; a diplomat who aids the dairyman to maintain the United States' Public Health rating.

The former plant manager is now a superintendent who regulates the traffic flow of milk through his plant in a sanitary, efficient manner. He relies on educated personnel to perform the many technical aspects of dairy production.

The mere size of modern dairy plant operations has led to extreme specialization. Each area has its own experts: product manufacturing, milk processing, microbiological analysis, chemical and mathematical computations. The inevitable growth and change in dairy technology will continue to be the rule, not the exception.

Any modern dairy technology curriculum must consider these factors. It must also consider the varied educational ability and objectives of the students it receives. A student graduating from high school may be in limbo, not knowing what career to undertake, not sure of his potential and lacking confidence in his ability. His goal is only to get a two year degree in agriculture. He will probably take a minimum number of general education courses, with the balance in technical courses needed to provide expertise in the chosen technical field, hoping to find employment after graduation. For many students, however, the desire for education blossoms in the third semester and the student plans to continue his education toward a four year degree. Teaching really is meaningful at this point.

Many of our students are farm oriented, agriculture motivated, but realize the goal of owning a dairy farm or cash crop operation today is beyond their reach, financially. They are often pleased to find there are careers in agriculture-related fields such as dairy processing, which may satisfy their desire to work in agriculture.

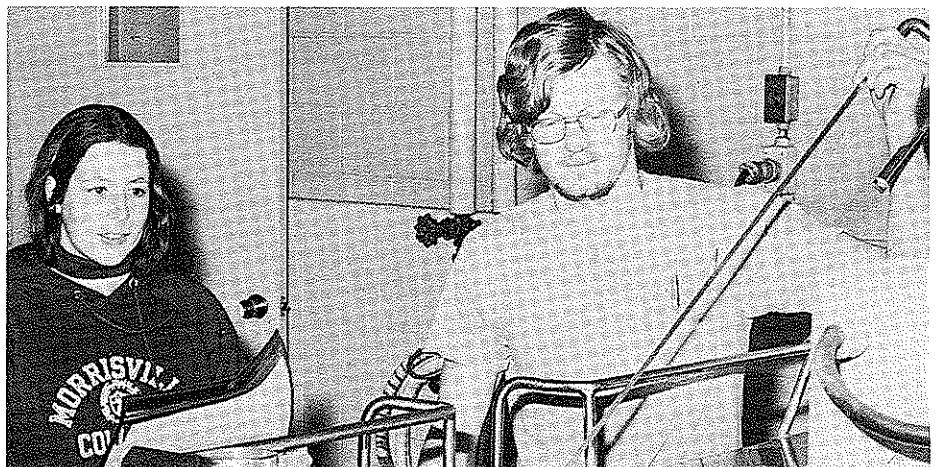
MODERN CURRICULUM

The technical curriculum in dairy technology requires basic knowledge in math and science. Several courses are offered to provide for the various levels of student ability. The preliminary math course is useful in subsequent dairy courses requiring dairy standardization and product formulation.

An attempt is made to make learning experiences meaningful. Once a problem is solved, it then becomes a lab project where the student will attempt to prove his computations by chemical analysis.

Our dairy courses are lab oriented, utilizing scientific principles with hands-on technology. Butterfat testing of milk and dairy products by various chemical tests are routine in our dairy

(Concluded on page 249)



Student at the right measures milk in farm bulk tank while student at left computes and records weight.

PREPARING MEAT PROCESSORS

by
Gerardo Sepulveda
Vocational Agriculture Teacher
Laredo, Texas



Gerardo Sepulveda shows students where to cut to obtain correct cuts of beef.

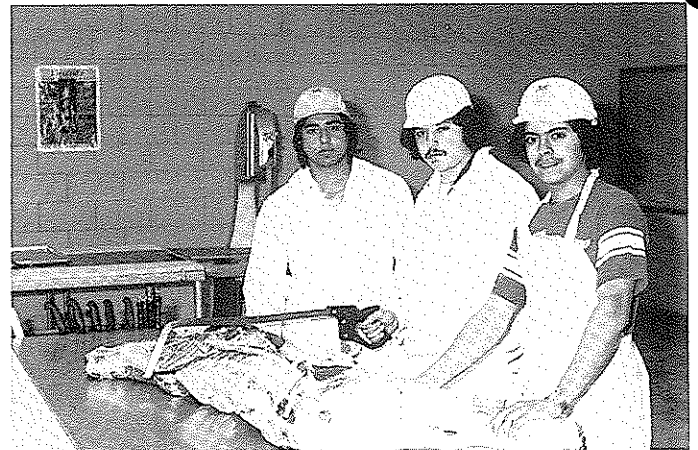
Agriculture is the nation's biggest industry. Producing America's favorite food—meat—is part of that industry employing scientific research, modern techniques, and efficient methods to put meat on America's table.

TEACHING METHODS

In teaching meat processing to high school students, one must realize what particular aspects will be most beneficial to the student. The questions, "How much should the student learn?" and "How much in-depth should one try to accomplish?" must be asked.

Teaching in this area for four years, I have found that too much detail will bore a student and the objectives will not be accomplished as easily. Too much practical work can bore students as well and will probably make them wonder whether you are trying to make them become professionals in such little time, work them too hard or simply work them to a high degree of efficiency which they are not able to cope with.

I am a firm believer in the sayings that "practice makes perfect" and that "there is no substitute for experience," but I have found out differently. Most students in high school are not fully mature yet; will certainly have other interests; and have not made up their minds as to what they wish to do once they have graduated from high school. What should a teacher do at this stage of the game? What type of planning should take place? What should be the goals? How should they be accomplished?



Students use a bone saw to break carcass down into proper cuts.

BEEF PROCESSING

One of my main objectives is to introduce the various species of animals, with emphasis on beef, since beef ranks number one among Americans. We have access to a local packing plant which specializes in beef and provides an excellent place for field trips on a regular basis. Beef is also the major agricultural product of the area. Therefore, we spend a lot of time on it. We also leave some time for the processing of venison during the regular deer season.

The chalk board provides an inexpensive tool for explaining slaughter, followed by actual visits to the local packer. On occasions, a student may wish to slaughter his steer project. We do the actual slaughter, simulating the same conditions the slaughter plant would follow. Let's keep in mind that all sanitary rules must be followed so the student will not be misled. The same rules apply in the meats lab, for even though we are only subject to city inspection, the learning process must include the same rules, conditions and circumstances. Classroom settings call for no packing house clothes, but when we are processing, the students must wear a coat, hat, and his set of knives. Clean up is done at the end, bearing in mind sanitation and cleanliness at all times. The use of a disinfectant with a soapy solution insures that this is accomplished to the fullest extent.

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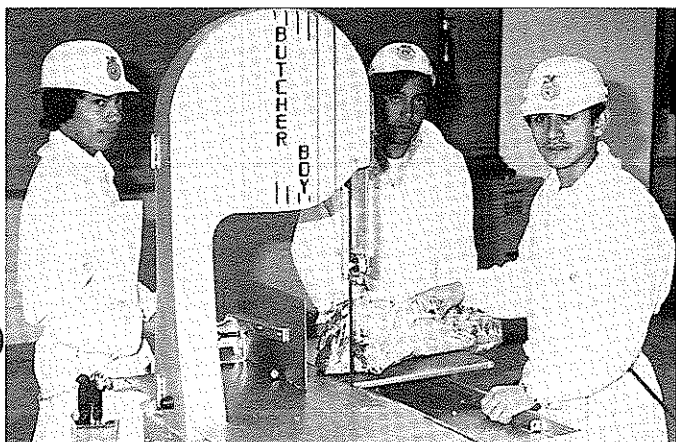
Hamburger is being ground here by students in meat processing.

CONTINUED PREPARING MEAT PROCESSORS

When slaughter in beef has been accomplished, the cuts of beef are introduced by the use of slides. Learning the cuts of meat is essential. Reference is made to an actual carcass and how to cut it with little or no waste in the end. The cuts are followed all the way to wrapping, labeling, and placing in the freezer for storage. Alternating the students ensures that everyone gets to actually cut, identify, and wrap each cut.

PORK PROCESSING

Pork processing is followed in the same manner, with no actual experience on slaughter. I think that once a student is introduced and sees the slaughter of beef, he is able to relate this to other species as well. However, he is not able to slaughter pork efficiently. When we are ready to cover pork cuts and need practical experience, I order some pork carcasses and process them into the retail cuts. Pork



Students use the meat band saw to cut steaks and roasts.

is also wrapped and labeled and made available for sale to the faculty or school personnel. We sell for lower than supermarkets because we wish to turn over the money and make space for other types of meat.

MUTTON PROCESSING

Our stock show is in the spring, during which time many fine lambs are exhibited and finally slaughtered. Here, we publicize our program and try to attract some buyers to purchase these lambs, with the idea in mind that we will process the carcasses. This way, we receive some lambs for practice by the students with no initial investment on our part.

When a student graduates, he has enough knowledge to continue his education or simply go to work with a local meat market. He has enough skills to do a good job, for which he is now being paid. The working conditions are excellent and the pay is good. ◆◆◆



Proper packaging is a skill necessary for students in meat processing.

FIELD ENGINEERING FOR AGRICULTURAL DEVELOPMENT, By N. W. Hudson, Clarendon Press, Oxford University, 1976, 225 pages, \$17.00.

One of the first problems developing countries face is how to be self sufficient. Few countries have ready available rich agricultural land. By opening up new land and managing the present arable acres, developing countries can begin to reach their goal. Agricultural engineering techniques improve these soil and water resources. The techniques covered in this text are useful for any area throughout the world as well as developing countries.

Unit one, concerned land selection. All forms of data on soils such as structure, texture, land classification and land capability, form a background of knowledgeable signs to use in trying to locate and to speculate future agriculturally prosperous land.

Development planning, clearing and leveling arid land reclamation were the essence of Unit Two. Much detail was used in describing types of machinery and their operation in clearing woodland, bush or eroded areas or leveling for irrigation.

Unit Three dealt with run-off and streamflow. There were many simple and

informative charts on relating rainfall, run-off, water yield and catchments to the design of weirs, dams, and flumes.

Open channel flow, open channel design, pipe flow, and pumps were demonstrated in Unit Four. The quantitative study involved in this aspect of agricultural engineering was simplified by the author using easy to follow graphs, formulas, etc., to explain complicated matters such as design of channels, water velocity or friction loss in pipes.

Water is a key to agriculture. Water storage is important because water is not always available when needed. The construction, design, and capabilities of water storage dams and weirs are graphically presented in Unit Five.

Irrigation principles are the topic of Unit Six. The pros and cons of sprinkler vs. surface irrigation, along with the rationale for irrigation were explained while not forgetting the underlying problems and crop variations involved.

The unit of basic soils is useful when drainage is explained. Sub-units included subsurface drainage, surface drainage, and the needs and benefits of drainage.

Conservation of our most vital resources, water and soil, includes erosion control, gully control, and wind erosion. These items in Unit Eight included tillage methods and

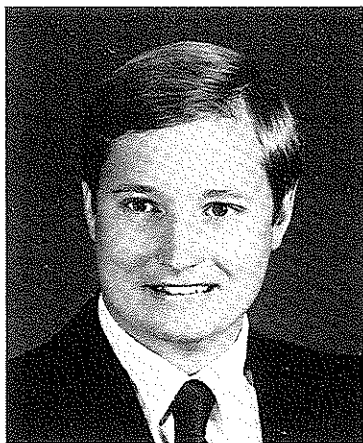
equipment that favor conservation, crop management, and biological erosion control.

All measurements were in English and metric terms of units. Extremely useful was the convenient glossary of conversion factors on units of measure.

N. W. Hudson worked in Africa on soil and water conservation for 13 years. In 1964, the National College of Agricultural Engineering at Silso, Bedford, England called upon Hudson to be Director of Studies on Soil Conservation. He spent 1966-1967, as a visiting Professor to Iowa State University. Between 1971 and 1973, he was Associate Professor of Agricultural Engineering at the Asian Institute of Technology in Bangkok, Thailand. N. W. Hudson's expertise is shown also by his earlier book *Soil Conservation* published through Cornell University Press in 1971.

The book was divided much like a text into eight units. These engineering methods were simplified and easily followed. The method of expression used in this book would make it easy to use as a textbook or as a self-guide. The book could serve as an easily understood guide reference for vocational agriculture classes, soil and water engineering or forestry.

Alfred Clarke
Myrtle Beach, SC



Ronald A. Brown

The FFA Side of The TRIANGLE

Ronald A. Brown
Mississippi State University
Teacher Education

Effective agricultural education programs have four major components — in-school instruction, supervised occupational experiences, Future Farmer of America chapters, and adult instruction. The first three of these apply directly to our secondary school students and must all be present if our students are to benefit as they should. Figure 1 shows the dependent relationship each of the three has on the others. All three must be present to ensure a comprehensive and effective program. A well rounded program which includes these three aspects triples the opportunities for learning activities.

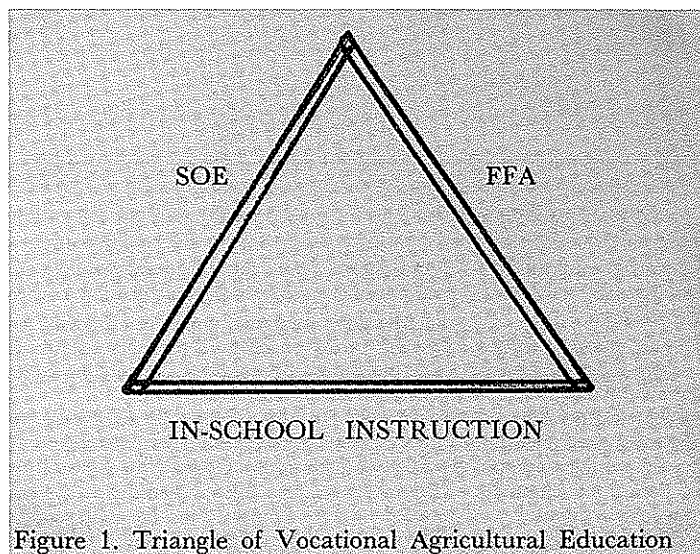


Figure 1. Triangle of Vocational Agricultural Education

The aims and purposes of the FFA are an essential and intracurricular part of vocational agriculture. An effective FFA helps to motivate and reward members for achieving goals of the total vocational agriculture program. The first two lines of the motto, "Learning to do, doing to learn . . .", embody the practical philosophy of vocational education and show how tightly they are tied together. The FFA ties the other two parts of the program together and facilitates the development of competencies needed for career entry and advancement. The FFA should not be regarded as a goal of vocational agriculture but a means of reaching the goal of vocational career preparation in agricultural occupations. Since the FFA is a necessary means of goal achievement in vocational agriculture, it should be a part of every student's program.

HOW GOOD IS YOUR FFA CHAPTER?

Many times, teachers may realize that the FFA is extremely important, but never stop to determine the actual effectiveness of the local chapter. Sometimes, "good" FFA chapters are those where a small percentage of the members are extremely active while other members are satisfied to only pay dues and have their picture made with the group for the school yearbook.

The official manual of the FFA lists eight essentials of a good chapter. They are:

1. A knowledge of the FFA on the part of every member.
2. Capable officers and leaders.
3. Responsibilities shared by all members in chapter activities.
4. A challenging program of activities.
5. Adequate financing for chapter activities.
6. Proper paraphernalia, equipment, and records.
7. Well planned, regularly held chapter meetings.
8. Support by school officials and community leaders.

These eight essentials of a good chapter should serve as criteria by which teachers evaluate FFA chapters. Almost all of these depend on active involvement by *all* of the members. Of course, it is easier to work with the few in each chapter who are really interested, but how successful can our chapters be without total involvement? To put these essentials of a good chapter into practice requires the implementation of a program of activities. The degree to which the program of activities is completed also serves as evaluative criteria. Probably, though, the most important aspect of evaluating FFA chapters is the development of an attitude which makes us want a better chapter.

WHO SHOULD BE INVOLVED

Of the approximately 660,000 students enrolled in vocational agriculture, about one of each four of them are not members of the FFA. Of those who are members, ten percent or more probably do not participate as they should. Does this mean that we allow over one-fourth (over 200,000) of our students to partially miss the opportunity to:

- develop competent, aggressive, rural, and agricultural leadership abilities
- create and nurture a love of country life
- strengthen their confidence in themselves and their work
- create more interest in the intelligent choice of agricultural occupations
- be encouraged in the development of individual farming programs and establishment in agricultural careers

(Concluded on next page)

CONTINUED THE FFA SIDE . . .

- be encouraged to improve the farm home and its surroundings
- participate in worthy undertakings for the improvement of agriculture
- develop character, train for useful citizenship, and foster patriotism
- participate in cooperative effort
- be encouraged to practice thrift
- be encouraged to improve in scholarship
- participate in the development of organized rural recreation activities.

Surely no teacher of vocational agriculture will want to admit that some students fail to have the opportunities listed. Yet, these are the purposes of the FFA. These are the opportunities offered through the FFA and many students aren't involved. How many of your students fail to have these opportunities by not actively participating in the FFA?

HOW CAN MORE STUDENTS BE INVOLVED?

"If we truly believe that the FFA is an integral part of instruction in vocational agriculture, then every student must be a member of the FFA. If every student is a member, then it is the responsibility of the organization to provide something for each student — but not necessarily everything for every student."¹

In order to provide effective activities for each student, there must be some advanced planning of these activities. In the FFA, this plan is known as a Program of Activities. It is a "road map" used to chart the course to be taken to accomplish chapter goals. It also serves as a basis for evaluating and improving chapter activities each year.

An effective program of activities is interesting; develops leadership skills; educational; meets the needs of a majority of the members; broad enough to involve and challenge all members; stimulates, motivates, and develops pride in the members; contributes to the development of comprehensive SE programs; consistent with the FFA and school objectives; and can be adequately financed.² A program of work which has these qualities should involve every member in its development and implementation — in at least one of the eleven program areas.

How can more students be involved in the FFA? Involve them in planning and implementing a program of activities which contains something of interest to them.

¹Quote by H. N. Hunsicker, National FFA Advisor, in the *FFA Advisor's Handbook*, 1975, p. 57.

²*A Guide for Use in Planning Your FFA Program of Activities*, Washington, D.C.: The Future Farmers of America in cooperation with U.S.O.E., March, 1975.

CONTINUED PREPARING DAIRY TECHNOLOGISTS

lab. Microbiological analysis for quality control of milk, water, dairy products, and utensils provide a student a strong background in these areas. There are individual projects in product manufacturing which permit the student to research areas of his own choosing.

LICENSES

The courses prepare the student for various state licenses, namely: Milk Receivership, Butterfat Test, Direct Microscopic Somatic Cell Count, Wisconsin Mastitis Test, Whiteside Test, and Bacterial Enumeration. Grades received on tests taken for state licensure are included in the final course grade. Having an outside institution (New York State Department of Agriculture and Markets) give exams and licenses is a strong motivation factor.

The practical aspects of the student's learning experiences are evident in the operation of a complete modern dairy plant at the college which provides for the dairy product needs of the college student population of 2500. Nearby milk plants and farms round out the practical experiences needed for the preparation of dairy technology workers.

COMMUNICATION

The development of communication skills is an important part of our curriculum. We encourage informal communication with groups of students and private discussions with the instructor. Students want to talk, they want someone to listen. Their experiences verbalized and insights developed are part of the learning-maturing process.

Opportunities for public speaking are provided in topic presentations before the class. Discussions with health sanitarians and leaders in the dairy industry field are stimulating and help the student visualize what he is working toward.

When the student completes the two year dairy technology curriculum, he is a highly educated individual, confident in his ability and fully competent to solve problems in the complex, modern dairy field.

Here at Morrisville Agricultural and Technical College, we try to light the spark that will fire the individual to continue his education, be it formal or informal and apply this learning toward reaching his highest potential. ♦



Student cuts cheese curd in Morrisville College dairy manufacturing laboratory.

A TOTAL AGRICULTURAL PROGRAM

by
Robert L. Hayward
Assistant Director, Agricultural Education and
State Department

Lee Fitchett
Director of Vocational Agriculture
and Adult Education
Chillicothe, Mo.

Chillicothe school officials believe there are probably as many students interested in agricultural farm related jobs as there are in production agriculture. This may be a good omen since it requires four people working in agribusiness to supply the needs of a full-time farmer.

Training for production agriculture (farming) has been and continues to be big business in the vocational agriculture department at Chillicothe because a large and productive farming area is served by the school. However, it has been discovered that students interested in agribusiness careers were diverted from their desired objective because they did not fit into the production agriculture training program. Many did not have the facilities or opportunity to secure occupational experience on a farm.

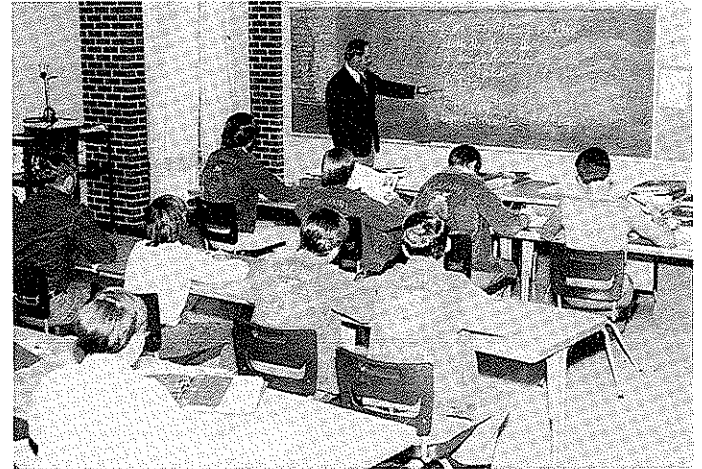
It is now possible for the students interested in agricultural careers other than farming to pursue a course which will prepare them for farm related jobs. Naturally, these students need training in sales and service, business methods, and human relations; but do not need to spend a great deal of time on actual farm production problems. For example, it is more important for them to know how to sell or display a farm product than to know exactly how to handle a sow at farrowing time.

PILOT PROGRAM

Bill Gutshall, full-time Chillicothe vo-ag instructor, conducted a pilot program for the non-farm and farm students who were interested in agricultural careers other than farming. The program reached into the junior high (8th grade) and secondary school levels and included a study of the awareness of careers in agriculture. Career awareness was taught as a part of the social studies course in the 8th grade. School counselors and principals assisted in developing the program. Students were involved in activities to develop their understanding of agribusiness occupations and skill requirements. They were exposed to a large variety of occupations through field trips, guest speakers, personal interviews, and up-to-date teaching aids.

A highlight of the program was the enthusiasm demonstrated by the students, their parents, and ag businessmen. Nearly 25 percent of the Chillicothe 8th grade students, and 13 students from surrounding schools, enrolled in a vocational agriculture course the next year in high school.

The students were tested in a number of ways to determine as nearly as possible their actual interest in agricultural careers. A knowledge test, "What is Agribusiness," and "A Career Inventory Sheet" were given to each student. The "Differential Aptitude Test" was also used.



Bill Gutshall, Vo-Ag instructor at Chillicothe, Mo., spends full time with students whose main objectives are non-production agriculture.

THE SECONDARY PROGRAM

Now, partially as a result of the pilot study, the agribusiness course on the secondary level is a full and complete curriculum, including Agribusiness I, II, III, and IV. Enrollment has grown to 81 students which is considered to be more than one full-time instructor can handle.

Senior students are placed on the job for a great deal of their training. A survey of agribusiness firms revealed that 20 of them would hire students enrolled in the program. Carefully selected training sites where the employer assists the student in learning the trade and other points as set forth in a prepared training outline are utilized. It is an important phase of the educational program. The instructor works with these students in the classroom for approximately one period each day and makes regular visits to the training site to assist the student and employer in carrying out the training outline. The students are given school credit for released time from the classroom.

Instructor Bill Gutshall developed trainee-employer agreement forms, guides for the student training outline, record books, suggestions for selection of training sites, and other information. This work was done in connection with the pilot study and further improvement is being made in both forms and procedures as the program continues. The pilot study and guidelines were developed through the cooperation of the Chillicothe Public Schools and the State Department of Elementary and Secondary Education.

(Concluded on next page)

THE POST SECONDARY PROGRAM

Many graduates of the secondary program find they need additional specialized training, so they enroll in post secondary programs. The full-time two-year post secondary program at Chillicothe provides opportunity for graduates all over the state to become more specialized. The two-year Farm Industrial Equipment Repair curriculum at Chillicothe is meeting the needs of those interested in farm power and machinery occupations.

Probably the best way to measure quality of a training program is the number of graduates who find employment. On this important item, the Chillicothe program rates very high. Nearly 100 percent of the 77 graduates over the eight years the post secondary program has been in existence have found employment. It is estimated that there are 15 jobs available for each graduate. The 1975 graduates found employment at an average annual salary of nearly \$9,000. Graduates are employed by nearly all major tractor and machinery companies, dealerships, gas and diesel tractor repair shops, machinery and parts stores, and other in the tractor and machinery industry. Inquiries from prospective employers have come from all states in the Midwest.

Placement and follow-up are important to successful employment. A complete file of each graduate is maintained. The school assists graduates and employers to get in contact with each other both at the time of graduation and in case of a change of jobs or advancement later on.

Employers are contacted from time to time by the school supervisor to secure suggestions for changes or improvements in the training program. A number of industries have supplied some special equipment. Advisory committees are helpful in counseling with school officials on all of the vocational agriculture programs.

The great investment required for power and machinery to operate a farm has prompted a number of trainees to take the two-year course in order to successfully operate and repair their own farm power and machinery. Therefore, some students enter the program with the objective of returning to the farm. Ten percent of the enrollees enter the training program with the intention of returning to the farm.

The two-year course consists of a total of 2160 hours of instruction designed to prepare skilled mechanics in the

field of Farm and Industrial Equipment Repair. Practical shop work experience is provided at the school as well as on-the-job training. Follow-up and placement, including on-the-job experience, require eight weeks of training during the summer between the first and second year courses. The first year curriculum includes basic training in small gas engine and tractor repair, electrical systems, power trains, basic hydraulics, machinery repair, and on-the-job training. Students advancing to the second year receive training in diesel fuel systems, hydraulics, air conditioning, electrical systems, blowers and turbochargers, diesel engine repair, air systems, and welding.

THE TOTAL PROGRAM

Officials of the Chillicothe Public Schools are enthusiastic about their total program of agricultural education. The Area Voc-Tech School offers the training in secondary, post secondary, young farmer, and adult classes. The program has grown since 1967, from a one-teacher department to a staff of seven full-time instructors and one local supervisor. Further expansion appears eminent.

The secondary program, which emphasizes farm production, related farm mechanics, and FFA, is taught by Ron Wolf and Don Cassada. Ninety-four students are enrolled. Fifteen secondary students come from five schools in the Chillicothe area. Bill Gutshall spends full-time on the secondary agribusiness program. Ron Cobb is a full-time instructor for a large adult and young farmer program. Wayne Wade, Don Ward and Siegfried Blake handle the post secondary instruction. Lee Fitchett is supervisor of the agricultural program and director of the vocational school's overall adult program. Mr. Fitchett also teaches a two-hour course on Agribusiness Financial Management.

The instructors also teach night classes for adults. Most of the instructors have had several years of occupational or trade experience in their teaching fields as well as advanced degrees in agriculture and education.

The principal objective of the agricultural education program at Chillicothe is to give everyone an opportunity to become successfully employed. Opportunities are great and much progress has been made toward reaching this objective. ◆◆◆

MEASURING STUDENT GROWTH — TECHNIQUES AND PROCEDURES FOR OCCUPATIONAL EDUCATION, by Richard C. Erickson and Tim L. Wentling. Boston, Massachusetts: Allyn and Bacon Inc., 1976, 443 pp., \$13.95

This tests and measurement text is divided into four major parts: 1. General Measurement Considerations 2. Teacher-Made Instruments 3. Standardized Instruments and 4. Obtaining and Using Measurement Information. Within the section on General Measurement Considerations were presented such topics as functions of measurement, types of measuring instruments,

validity, reliability, error, scales, and others.

The basic considerations for teacher-made tests were presented in steps such as planning and constructing cognitive, performance and affective measures, assembling the instrument and evaluating teacher-made instruments. The section on Standardized Instruments considered characteristics, development, sources, and criteria and procedures for selecting standardized instruments to be used in occupational information.

Obtaining and Using Measurement Information presented administering instruments, scoring, reporting and interpreting results, and using this information in occupational programs. All chapters were well organized and summarized for easy reference and reading. References were listed at the end of each chapter and name and subject

indexes at the end of the book.

The authors both came from occupational education. Dr. Erickson is Professor of Industry and Technology at Northern Illinois University and Vice President of AVA. Dr. Wentling is Assistant Professor in the Department of Vocational and Technical Education at the University of Minnesota, and is co-author of another evaluation text, *Evaluating Occupational Education and Training Programs*.

This text is an excellent reference book for high school and post high teachers and a very readable text book for undergraduate and graduate college programs in occupational education. Examples were taken from occupational situations and the text specifically written for measuring occupational student growth.

Editor



William T. Woody

FFA—A CURRICULUM WITHIN A CURRICULUM

William T. Woody,
Vocational Agriculture Teacher
Lorena High School
Lorena, Texas

I wish that teachers of Vocational Agriculture that do not use FFA as an integral part of their curriculum could see what the FFA can do through my eyes.

FFA at Lorena High School is truly a curriculum within a curriculum. It is the strength of our vocational agriculture department. Through FFA activities students gain strength not only in vocational agriculture, but also in their other studies and activities.

ACADEMICALLY

A student that is a FFA member will be a better speech student, bookkeeping student, and science student because of his involvement in FFA work. An English and speech student will gain a great deal of knowledge from radio broadcasting, creed contests, parliamentary procedure teams, and public speaking.

Math and bookkeeping may be improved by FFA through the keeping of project record books for advanced degrees. Science and chemistry students will gain knowledge from FFA through meat judging and milk quality and dairy foods contests. These two contests will aid them greatly in knowledge of muscle and bone structures of animals, and the chemical makeup of milk, cheese, and cottage cheese. Pasture and range contests will help a botany student greatly. Soil judging will also help in chemistry and science. FFA activities and contests aid students in other extracurricular activities. A competitive spirit and confidence of FFA participation has aided students at Lorena in band, speech club, athletics, and UIL events.

SOCIALLY

FFA at Lorena has strengthened all its members not only academically, but also in citizenship and community service. This is done with active involvement in *Building Our American Community* activities and a well planned program of work. FFA truly plans for the future and FFA can and will aid all students in preparing themselves for a more complete life.

I personally could not teach vocational agriculture adequately in these modern times without the help of the FFA. The FFA has done so much for me personally and has helped so many young people, that without it, I would be just another teacher. I truly hope that all vocational agriculture teachers use the FFA strongly in their programs. Without FFA there is no challenge to learn more and no place for a student to really know if he or she can compete in life with the knowledge they have. The members of Lorena's six state winning milk quality and dairy foods teams know they can compete with life and win at home in our state and nationally. Members of our state winning leadership teams know they can compete verbally and express their beliefs to anyone. The thirty state farmers and four American farmers at Lorena know they can compete in an agricultural occupation and succeed. Our three state vice-presidents know they can compete in life and that the FFA was the intracurricular activity that made their success more possible.

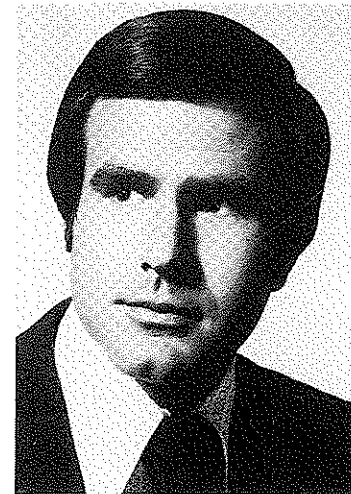
EXAMPLES

It is no accident that FFA is able to help so many young people in so many ways. The FFA is very strong and dynamic on the local, state, and national

level and the young people it touches are so weak and hungry for knowledge, when they first come in contact with it, that they quickly grow to a strength comparative to the FFA itself. They quickly learn that anything is possible if you work hard enough for it. I truly wish that the teachers of vocational agriculture that do not use FFA as an integral part of their curriculum could see what the FFA can do through my eyes. *I wish they could see the little greenhand stumble through the creed, and later see him win the state public speaking contest. I wish they could see a greenhand that could not speak in front of anyone later become a state vice-president. I wish they could see a boy start his project program with two small calves and then watch him receive the American Farmer Degree. I wish they could see a young man who never thought he would be financially able to go to college receive an FFA \$4,000.00 scholarship. And also see the faces of his parents when they first heard of this scholarship. I wish they could see all the FFA faces I have seen, when they win and when they lose. If they could see these things they would realize that the FFA is one of the greatest aids that a vocational agriculture teacher can ever have. The FFA can teach you as well as the students to have a winning attitude, a competitive spirit, pride, and self-confidence.*

If we teachers allow the FFA to help us, and if we inform our community and others in our schools about what FFA can and will do for our students, they too will also believe that the FFA is a great intracurricular activity. The FFA has always been great and will always be, if the FFA means as much to you as the FFA means to me. ♦♦

Benefits And Responsibilities of CVE in Agriculture



Bobby Richardson
Teacher-Coordinator
Cooperative Agriculture
Albuquerque, New Mexico

Classroom instruction becomes more meaningful when there are opportunities for the student to experience "learning by doing." The purpose of cooperative agricultural education is to provide a combination of classroom instruction and employment in the student's chosen field in agriculture. Cooperative vocational education involves the community, the student, the parent, the school, and the employer in the educational process. The agriculture teacher-coordinator and interested community people work together in providing structured part-time employment for the students that will assist them in developing job-entry skills. Students in our program are required to work for a minimum of ten hours per week on the job. For this work, they receive a minimum wage and school credit.

Benefits to the Student

1. An opportunity to assume responsibility
2. Acquisition of knowledge and work habits necessary for successful job entry performance from the "real" world of work
3. Augmentation of his financial resources to assist him in remaining in school
4. An understanding of the relationship between formal education and work
5. Job entry skills

Benefits to the Employer

1. Carefully selected part-time help who may be trained for possible permanent employment in the future
2. Employees who are receiving additional training through related instruction at school
3. Involvement in educating the community's youth
4. A training program which utilizes resources he may not have in his own operation

Benefits to the School

1. An opportunity to relate academic training to the job requirements
2. An opportunity to offer vocational agricultural training without an extensive outlay of equipment and materials

3. Increased ability to hold students in school and reduce dropout rate
4. Information on modern trends and developments in agriculture
5. A method to meet community needs without overtraining
6. Better school-community relations

Benefits to the Community

1. Individuals who are more thoroughly trained than graduates without "on-the-job" experiences
2. Acquaintance with the work that young people trained in vocational agriculture can perform
3. Increased articulation and cooperation between community and school in educating youth
4. Increased possibility of keeping young people in the community after graduation

Criteria in Selecting Students

1. Full-time status and age 16 to 19 years

A full-time student is one of the following:

- a. A legally indentured apprentice or a continuation pupil regardless of the number of subjects carried or the school in which he is enrolled
 - b. A pupil enrolled in four or more subjects including cooperative vocational education
 - c. A pupil enrolled in a summer school approved by the State Board of Education
2. Parental or guardian approval
 3. Approval of the agriculture instructor and the guidance service
 4. A vocational goal for which work experience will, in the opinion of the agriculture instructor, contribute to job entry skills
 5. Aptitude and ability in school subjects related to the occupation for which he is to be trained
 6. An acceptable record of school attendance
 7. Desirable personal characteristics, including such traits as good character, loyalty, and initiative

Responsibilities of the Student

1. To obtain a work permit
2. To obtain a social security card
3. To arrange his schedule to provide ample time for work and study

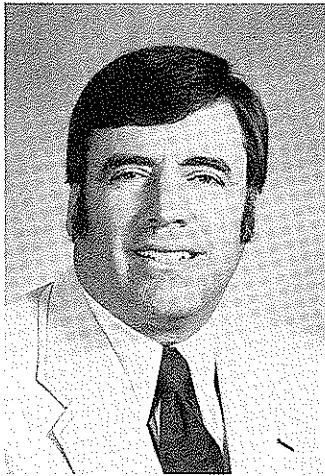
4. To appear well groomed
5. To be honest, industrious, punctual, courteous, and willing to learn under supervision and follow instructions
6. To attend work promptly and regularly, and notify his agricultural coordinator and employer at once if illness or emergency prevents his attendance at work
7. To attend all related classes and perform all assigned work to the satisfaction of the agricultural coordinator
8. To consult the agricultural coordinator if he wishes to make any changes in employment or schedule
9. To provide transportation to and from work

Responsibilities of the School District

1. To provide a vocational agriculture instructor to instruct the related class
2. To provide sufficient time for the agriculture coordinator to identify work stations and visit students and employers at participating stations
3. To provide sufficient time for the coordinator for discussion or consultation with employers or students
4. To observe the students while on the job and consult with employers at least twice each semester
5. To maintain a record keeping system that includes:
 - a. a record of the type of work experience in which each student is enrolled, where he is employed, the number of hours he works, and his immediate supervisor

(Concluded on page 263)

—STUDENT RECRUITMENT— Helping Meet National Needs



Jerry Stockton

Can student recruitment help provide competent agricultural education majors to meet national needs?

Student recruitment can be an effective instrument for training and preparing vocational agriculture teachers as well as securing competent students for university and college degree programs. Our national need for additional qualified vocational agriculture teachers challenges teacher educators to produce additional and better qualified graduates. Ample opportunity for job placement is a reality for certified graduates of agricultural education programs.

PROGRAM DEVELOPMENT

In the Spring Semester, 1976, the Texas Tech University Collegiate FFA Chapter initiated a high school recruitment program with strong administrative support from the College of Agricultural Sciences. The program was mutually designed with input from students and organization sponsors. Volunteer Collegiate FFA members were utilized with no stipulation as to sex, race, major, or philosophy. The volunteers were divided into recruitment teams of four members each, providing flexibility of group members when conflicts occurred. Members formed their own teams with a designated captain. The captains comprised an executive committee, attending special meetings for articulating and disseminating information for their respective team members. The team captains also served as telephone committee members to disseminate necessary information from sponsors to recruitment team members.

*Jerry Stockton
Teacher Education
Texas Tech University
Lubbock, Texas*

Knowledge of degree programs in the College of Agricultural Sciences, as well as additional information concerning intramurals, student housing, loans, scholarships, fraternities, etc., was essential to team members. Volunteer team members researched each area, and a prepared, written excerpt was given to each member for incorporation into program presentations.

Vocational agriculture teachers were the key contacts for arranging programs in the various high schools. A postcard was mailed requesting the name of the school, time, place, type of group to be addressed, and any additional information the vocational agriculture teacher could provide to aid the recruitment teams. The vocational agriculture teachers worked closely with high school administrators and counselors in arranging for the presentations.

PRESENTATIONS

Prior to presenting programs to high school groups, a preliminary "dry run" was held to develop an acceptable presentation. The resulting program consisted of a short introduction of about fifteen minutes providing an overview of the College of Agricultural Sciences and information concerning Texas Tech University followed by a question and answer session. Normally, the teams used at least one hour for their presentations. It was decided by the members that more spontaneity would result from interaction between high school and university students if sponsors did not attend. Degrading remarks concerning other universities, technical schools, community colleges, etc. were not included in any presentation. Feedback from vocational agriculture teachers was closely monitored by the Agricultural Education Faculty, involving a telephone follow-up after each presentation. Secondary school administrators and vocational agriculture teachers liked the format and the programs.

Funding for the recruitment visits, which was obtained through the Student Senate, was of essence as team members used personal transportation. A total of 826 high school students attended the presentations at 34 different high schools.

RESULTS

It was impossible to determine the effect of the recruitment teams' presentations on high school students; however, many positive verbal responses were received from prospective students. It was not difficult to determine the effect of total involvement in a recruitment program regarding agricultural education students. In rap sessions following each week's presentations, students alluded to the fact that "recruitment" had been one of the most rewarding experiences they had encountered in their university career. They believed that the experience had been of considerable benefit in preparing them to teach vocational agriculture.

Participating university students were afforded the opportunity to interact with high school FFA students, and recruitment team members are now more cognizant of the importance of FFA work and the role FFA advisors play in the school systems. An important learning situation developed from exposure of recruitment team members to vocational agriculture teachers and high school administrators in their daily working environment. Program presentation to students from high schools of different sizes provided valuable knowledge concerning the many different teaching situations.

IMPLICATIONS

Can student recruitment help provide competent agricultural education majors to meet national needs? Indications are that the answer is yes. Positive effects have been observed concerning potential agricultural education students.

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Recruitment Gets A Lift From AGRIBUSINESS

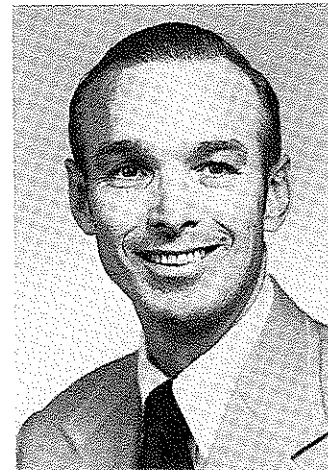
Roy D. Dillon
Professor, Agricultural Education
University of Nebraska-Lincoln

This article is designed to describe how one state approached and obtained financial scholarship aid from an agribusiness, for the purpose of establishing Agricultural Education Scholarships as college recruitment incentives. The project was possible only through the planning and follow-through of the teacher educator and local vocational agriculture teachers.

The Alpha Tau Alpha Fraternity at the University of Nebraska conducted an active recruitment campaign for agricultural education students in 1975-76. One activity began by requesting an audience with the State Board of Directors, Felco Land-O-Lakes (District 16), which comprises about ninety percent of Nebraska. Mr. Gerald MacDonald, District 16 General Sales Manager, was the initial contact. After discussions with Mr. MacDonald, it was evident that he was in full support of the scholarship concept. The short teacher supply was cited, as well as the out-migration of vocational agriculture teachers to agribusinesses such as Felco.

The State Board of Directors decided to poll their area cooperatives. The ATA Officers met later with the State Board, and were told that District 16 would support their proposal for four new agricultural education scholarships; three at \$500 each, for a freshman, sophomore, and junior, and one at \$700 for a senior. Annually \$2200 would be contributed. An incoming freshman could retain the scholarship all four years by meeting certain scholarship requirements. In total, four students would participate in the program each year.

The local vocational agriculture teacher played an important role in obtaining the scholarship funds. As the local agricultural educator, the vocational agriculture teacher contacted the local Felco Cooperative to support the request for contribution of monies for the scholarships. All monies had to be contributed by the local Felco Land-O-Lakes Cooperatives as the State Board of Directors was a representative group only.



Roy D. Dillon

The interest of the Felco State Board of Directors and local vocational agriculture teachers have helped obtain sufficient monies to easily maintain the new scholarships for two years. Felco Land-O-Lakes District 16 has set their goal of raising enough monies from the member cooperatives so the scholarships can be maintained from the investment interest. Monies are presently invested through the University of Nebraska Foundation.

These scholarships are made possible because one agribusiness believed "this is the way to pay back the field of vocational agriculture for providing the talent we have employed from high schools in the past".

Published as Paper No. 5270 Journal Series, Nebraska Agricultural Experiment Station.

CONTINUED STUDENT RECRUITMENT . . .

Although enrollment at Texas Tech University decreased 4.5% in 1976, the number of Agricultural Education majors increased nearly 20%. Whether the higher percentage was a result of the recruitment program could not be assessed, but a sharp increase occurred

in freshmen designating agricultural education as a major. Involvement of volunteer Collegiate FFA members in recruitment has increased on-campus recognition of the agricultural education program. In short, involvement in

recruitment can be a focal point for generating enthusiasm concerning agricultural education as a major, and hopefully the increase in qualified vocational agriculture teachers will help meet our national needs.

IN TOUCH WITH STUDENTS by John R. Campbell. Columbia, Missouri: Kelly Press, Inc., 1972. 367 p. \$3.95 (paperbound)

Improvement of the relationships between the teachers and their students and the realization of excellence in teaching are the major themes of this book. As indicated by the title, excellence in teaching can only result when the teacher is in touch with the students while they are in school and after they graduate. The author discusses the students in terms of their likes and dislikes, attitudes and other traits and behaviors. He emphasizes the need for student advisement and participation in student organizations and extracurricular activities

by teachers. Several teaching techniques are discussed briefly, including creative and innovative teaching. Other topics include evaluating learning, curriculum, rewards of teaching and administrative support of education. The book has an abundance of quotes from authors including distinguished educators, philosophers, politicians and students. There are but a few pages in this book which do not contain at least one quote.

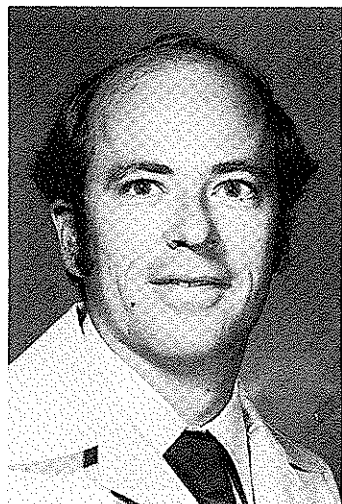
Dr. Campbell is professor of Dairy Science at the University of Missouri at Columbia. He has served as a faculty advisor to many local and national student groups. For his understanding and assistance to students, Dr. Campbell has been presented the Outstanding Advisor Award by the

National Student Branch of the American Dairy Science Association twice in recent years.

In Touch With Students is a book written for the college teacher. While all may not subscribe to Dr. Campbell's philosophy and concepts, the book should be a part of the personal reading of all persons who are planning to teach or who are currently teaching in a college or university. Some interpretation of the philosophy and concepts will be required by a person reading the book who plans to teach in the community college or high school.

Donald E. Elson
Virginia Polytechnic Institute &
State University
Blacksburg, Virginia

Factors Influencing College Curriculum Choice



Carl L. Reynolds
Assistant Professor
University of Wyoming

With the ever-present problem of an inadequate supply of qualified vocational agriculture teachers to meet the demand, recruitment of a sufficient number of students in the agricultural education curriculum is of constant concern. Even though recruitment efforts have been maintained at a fairly intense level by state and national leaders, the supply-demand problem still exists (Craig, 1975).

In order to improve recruitment efforts, several questions must first be answered. What influences college students to consider the agricultural education curriculum? Are these influencing factors different for the non-agricultural education majors? Which factors are more influential in the choice of a college curriculum? When do students make their curriculum choice? The answers to these questions would be valuable information to those in the agricultural education profession who are actively involved in recruitment.

A recent study conducted at the University of Illinois¹ was designed to provide answers to the posed questions. All agricultural education majors and a random sample of students in all other agricultural curricula, except home economics, were surveyed at Illinois State University and the University of Illinois to determine the biographical data, time of curriculum choice, and perceptions as to the degree of influence that fourteen selected factors had on their curriculum choice. In addition,

the sample of students in all other agricultural curricula (hereinafter referred to as the "Non-Ag group") was stratified for analysis purposes into three groups by class: (1) freshmen-sophomores, (2) juniors, and (3) seniors. Responses were obtained from 100 agricultural education majors and 106 students in the non-agricultural education curriculum group.

RESULTS

In assessing the degree of influence that certain factors had on curriculum choice, students responded on a four-point rating scale: (1) little or no influence, (2) moderate, (3) considerable, and (4) great influence. The data were analyzed using analysis of variance techniques. The results are reported in Table I.

The results indicate that students in the agricultural education curriculum placed significantly more emphasis on the influence of the college instructor, college advisor, high school agriculture teacher, courses taken in high school and job opportunities than did students

in the Non-Ag group. Of additional importance was the relative value of influence placed upon the 14 factors. The five highest ranking factors for each of the two curriculum groups can be seen in Table I.

By observing the mean values of the 14 factors in Table 1, it can be seen that job opportunities, college courses, and work experiences are an important factor for both curriculum groups. A significant difference observed between the two curriculum groups was the higher degree of influence placed on the high school agriculture teacher by the agricultural education majors. Of additional importance was the significantly higher degree of influence that agricultural education majors placed on the factors "college instructor" and "college advisor" compared with the Non-Ag Ed group.

Time of curriculum choice was obtained from each student by asking him to indicate the year in school during which his present curriculum choice

(Concluded on next page)

Table I
Summary of Analysis of the Degree of Influence
Of Selected Factors on Students' Curriculum Choices

Factor	Curriculum Group		F Ratio
	Ag Ed Mean Rating	Non-Ag Ed Mean Rating	
Father	2.11	2.39	3.14
Mother	1.95	1.91	0.87
High school guidance counselor	1.11	1.18	1.45
College instructor	1.98	1.54	11.9***
College advisor	1.83	1.53	5.88**
High school agriculture teacher	2.68	2.20	4.46*
Friend	1.96	1.74	2.81
Courses taken in high school	2.17	1.63	12.8***
Courses taken in college	2.77	2.61	1.19
Job opportunities	3.35	2.68	23.4***
Work experiences before college	2.49	2.69	1.40
Work experiences during college	2.24	2.50	2.45
FFA experiences	2.89	2.37	2.39
4-H experiences	2.10	1.82	3.06

* p < .05, ** p < .01, *** p < .001

¹Reynolds, Carl L., *A Comparison of Agricultural Education Students and Students in Non-Agricultural Education Curricula and Factors Related to Their Curriculum Choice*, Ed.D. Dissertation, University of Illinois, Urbana, 1976.

Table 2
Time of Present Curriculum Choice
Reported by the Ag Ed and Non-Ag Ed Curriculum Groups
(Frequencies expressed in percent)

Curriculum Group	Number of Students	Time of Curriculum Choice (by grade)					Total
		8-11	12	13	14	15+	
Ag Ed	100	12	14	22	36	16	100
Non-Ag Ed	106	23	21	26	23	7	100

chi square=11.40, df=4, $p < .05$

was made. The data from the two curriculum groups are reported in Table 2. The results indicate that a significantly larger group of agricultural education majors made their curriculum choice later than did students in the Non-Ag Ed group. A majority of agricultural education majors (52 percent) made their choice in the sophomore year and later. On the other hand, 70 percent of the Non-Ag Ed students reported they had made their choice prior to the sophomore year in college.

The biographical data revealed interesting contrasts regarding the background and experiences of the Ag Ed and Non-Ag Ed students. First, place of residence was significantly different. Seventy-four percent of the Ag Ed majors were from farm backgrounds compared to 54 percent of the Non-Ag Ed group. By contrast, only 12 percent of the Ag Ed group were from the city compared to 33 percent of the Non-Ag Ed group. Years of farm work experience data followed a similar pattern for the two groups. Sixty-nine percent of the Ag Ed majors had 11 years or more of farm work experience compared with 45 percent for the Non-Ag Ed group. In contrast, only eight percent of the Ag Ed group reported less than one year of farm work experience compared to 37 percent of the Non-Ag Ed group.

Information was also obtained on the amount of exposure to vocational agriculture that students in the two curriculum groups had received. Fifty-five percent of the Ag Ed majors reported they had taken four years of agriculture courses in high school compared to 25 percent of the Non-Ag Ed group. Twenty-nine percent of the Ag Ed majors reported no exposure compared with 59 percent of the Non-Ag Ed group.

SUMMARY

From the results of this study, it is apparent that the curriculum choice process is somewhat different for agricultural education majors than for students in the Non-Ag Ed group. Several of these differences are important for consideration in the planning of recruitment activities. The important influencing factors for potential agricultural education majors are vocational agriculture experience, the high school agriculture teacher, knowledge about the opportunities in teaching agriculture and college courses. Work experiences, knowledge of job opportunities and college courses appear to be important factors for students selecting a major in agriculture other than agricultural education.

The time of curriculum choice for most agricultural education majors is also an important factor to consider. Since the choice to enter the agricultural education curriculum is made later in the college years, a high degree of importance must be placed in the role of advisors and instructors who teach introductory courses in agricultural education.

RECOMMENDATIONS

On the basis of the previous discussion, the following recommendations are offered for recruitment of prospective teachers of agriculture into the agricultural education curriculum:

1. Since vocational agriculture experience is an important influencing factor on the curriculum choice, concerted efforts should be made to encourage and allow college bound high school students who are interested in enrolling in colleges of agriculture

to enroll in high school agriculture classes.

2. Since the teacher of agriculture is an important influence on a student's choice of the agricultural education curriculum, teachers should be encouraged to develop a positive attitude about their profession. Teachers should encourage their students who express interest in the profession and provide information and experiences that will help students who are considering choosing the agricultural education curriculum.
3. Since job opportunities are an important influencing factor on making curriculum choices, efforts should be maintained to provide current information on the supply, demand for, and job opportunities for qualified teachers of agriculture. Individuals in leadership positions at all levels should be involved in obtaining this information and disseminating it to local teachers of agriculture.
4. Since many students finalize their decision to enter the agricultural education curriculum after entering college, and college courses are an important influencing factor, teacher educators should make a concerted effort to provide outstanding introductory and exploratory courses which will encourage and assist students in choosing the agricultural education curriculum.
5. Since a considerable number of students in the Non-Ag Ed curriculum group had no vocational agriculture experience in high school, leaders in agricultural education and agricultural colleges should impress upon high school guidance counselors and administrators the value and importance of vocational agriculture for the college prep students interested in an agricultural career. ◆◆◆

References

- Craig, David G. *Supply and Demand for Teachers of Vocational Agriculture in 1974*. Department of Vocational-Technical Education, College of Education, The University of Tennessee: Knoxville, Tennessee, February, 1975.

AGRICULTURAL OCCUPATIONS PROGRAM PLANNING GUIDES

by

Thomas R. Stitt
Richard F. Welton
Eugene S. Wood

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Carbondale, Illinois

Applied biological and agricultural occupations teachers in Illinois are confronted with difficult and complex problems. The teacher's responsibility is no longer limited to teaching Production Agriculture I, II, III, and IV. Pre-vocational programs, vocational orientation, and specialization are providing expanded opportunities for high school students. These expanding opportunities present a set of unique problems for the teacher.

TO ILLUSTRATE

Beginning teachers may be in a single-teacher or multi-teacher department with as many as five Applied Biological and Agricultural Occupations teachers. The new teachers may be involved in on-the-farm and/or on-the-job supervision for all, part, or none of the agricultural occupations students. They may or may not be responsible for advising the FFA, or teaching a young farmer/adult farmer program. This teacher may be highly specialized and deal with only one particular instructional area or a generalist in a single teacher department with responsibility for instruction in each of the seven agricultural related options. Course content in each of these instructional areas conceivably could change annually based on advanced technology and community needs. If this were not enough, we have not considered the junior high career education programs and the post-high or community college classes which are being included in some applied biological and agricultural occupations teaching assignments. Clearly these teachers need assistance in meeting these challenges.

The main thrust of this article will be to outline a program conceived and implemented in an effort to provide in-service training for Illinois high school applied biological and agricultural occupations teachers. The primary purpose of this effort was to assist these teachers in enriching the existing programs and/or to provide the basis for expansion of offerings to include additional agricultural cluster areas. The basis of this program was the development of a set of program planning guides. These guides were developed in seven areas and include: 1. Agricultural Production, 2. Agricultural Supplies and Services, 3. Agricultural Mechanics, 4. Agricultural Products, 5. Ornamental Horticulture, 6. Agricultural Resources, 7. Forestry.

The determination of the content parameter for each guide was based on the U. S. Office of Education code and its subsequent definitions.

The contract for the Southern Illinois University/Carbondale-Division of Vocational and Technical Education project provided an opportunity for participation from throughout the total spectrum of Applied Biological and Agricultural Occupations staff in Illinois.¹ Representatives



From left to right, Dr. John W. Mathews, Head of Vocational Agriculture Service, Urbana, Ill., Dr. Thomas R. Stitt, Agricultural Education, SIU/C, Mr. Lonnie Hart DVTE Project Coordinator and Mr. G. Donovan Coil, DVTE, Springfield during a Steering Committee session in Springfield. Photo by R. Welton.

from each of the four institutions (Illinois State University, Western Illinois University, University of Illinois and Southern Illinois University), all who prepare applied biological and agricultural occupations teachers, the Illinois Division of Vocational and Technical Education staff, Vocational Agriculture Service staff from the University of Illinois, and applied Biological and agricultural occupations teachers from community colleges, and high schools participated in the project.

The activities of the project were coordinated by a Program Planning Guide Steering Committee. All major considerations relating to content, format, job titles, and the final draft were reviewed by the steering committee. The following component parts were included in each guide.

Introduction. In this segment unique consideration for the subject matter area is introduced.

Sample Job Titles and Cluster Areas. This includes information about salary, education requirement, and career advancement opportunities.

Competencies for Cluster Areas and Competencies for Job Titles. The competencies, stated in measureable terms, are presented by cluster areas and job titles.

Core Course Outline. The core course outline consists of a representative sample of how a curriculum could be constructed to teach the program.

Exemplary Teaching Plans. This section incorporates teaching plans from selected units from the core course outline. Each teaching plan included:

- a. Title.
- b. Introduction.
- c. Student performance objectives.
- d. Outline of instructional content.
- e. Possible student learning activities.
- f. Student references.

(Concluded on page 263)

Leader in Agricultural Education:



MAX KUSTER

by Doris Slocum*

One of the nation's best known agricultural educators will retire at the close of this school year. Max Kuster, the man responsible for starting the first two-year college ag program in Illinois in 1954, will complete a 30-year tenure with Joliet Junior College in May. Joliet Junior College has the distinction of being the nation's oldest public community college as well as being the home of the state's first two-year college agriculture program.

In addition to establishing the model for community college ag education, Kuster has been in the forefront of continuing ag education with what is perhaps the nation's most successful "farmers' short course." Each spring, just before planting time, more than 400 area farmers attend a 10-week updating and social series that keeps them abreast of the most recent machinery, fertilizer, seeds, stock, and marketing techniques and provides an evening or two of terrific entertainment for farmers and wives alike. Some of the farmers have been attending the short course regularly for its 30 year existence.

Kuster, whose agricultural expertise is topped only by his oratory, is not only an advocate of farming, but is also highly active in its promotional aspects. A sign inside the Joliet Junior College Agriculture Building proclaims "Agriculture, the Foundation of Civilization." Recognizing the importance of agriculture, Kuster has attempted to communicate that importance to the community as a whole. He is much in

demand as an after dinner speaker and master of ceremonies. He has talked to literally hundreds of groups of Future Farmers, 4-H Clubs, adult farmers, service clubs, and businesses and industries which deal with agriculture.

Kuster started the first junior college Student Agriculture Association in 1964, and was the first president of the Illinois Association of Junior College Teachers of Agriculture, an association which now numbers 157 members.

Max started his career teaching vocational agriculture at Mt. Zion High School in 1940. After six years in that job, he moved to Kewanee for a year and then on to Joliet where he taught in the Township High School and at the junior college for 20 years. When the junior college separated from the high school and became an autonomous community college district of the state, Kuster went with the college and has led the Department of Agriculture-Horticulture to its position as the fastest growing department of an institution that has more than doubled its size in the last five years.



*Doris Slocum, Director Community Relations, Joliet Community College, Joliet, Illinois

The Joliet Junior College ag-hort program now numbers 12 full-time teachers and 350 students. Serving as it does, the Chicago suburban area, the demand for trained horticulturists is great, and that aspect of the program has grown more rapidly than the agriculture program which concentrates now on grain production. (In the early years, animal husbandry was the focus of the curriculum.)

Kuster holds a masters degree in Agricultural Education from the University of Illinois and has done sixty hours additional graduate work. During a sabbatical leave in 1970-71, he made junior college agriculture programs throughout the midwest and west the subject of study.

Joliet Junior College president Harold McAninch calls Kuster, "one of the most outstanding speakers I have ever heard," and Orion Samuelson of W. G. N. Farm News fame calls him "Mr. Agriculture in Illinois."

During his years in the classroom, Max has made it a point to stay close to the pulse of farmers. He listens to them and has the ability to come across to them. They believe what he says, and they love the way he says it. A devout church-going Christian, Max is fully at ease in leading a group in prayer, but he keeps an audience at full attention when he speaks with homey—yes, earthy references to the subject that is nearest the heart of the farmer, reproduction. Anyone however, who would be offended by Max's humor would have to be so out of tune with the thoughts, actions, desires, and ambitions of the American farmer that Max wouldn't think he could make much difference anyway!

One of the greatest disappointments of Max's career was having to turn down the request that he bring the commencement speech to the college on the occasion of its Diamond Jubilee
(Concluded on page 261)

A Follow-up System



James Bob Drake

by
James Bob Drake
Teacher Education
Auburn University, Alabama

PURPOSE

The primary purpose of the study was to develop and implement a system to follow-up Alabama's secondary Agribusiness terminees (graduates and dropouts). To accomplish this purpose, the following objectives were established:

1. To develop and implement an Agribusiness terminee follow-up system for Alabama consisting of the following major components: (a) Occupation Patterns and Program Assessment Surveys for four-month, one-year, three-year, and five-year follow-ups; (b) Terminee Satisfaction Surveys; (c) Employer (immediate supervisor) Satisfactoriness Surveys; and (d) Curriculum Adequacy Surveys.
2. To develop (a) Occupational Patterns and Program Assessment Survey Instruments for four-month, one-year, three-year, and five-year follow-ups; (b) Terminee Satisfaction Survey Instruments; (c) Employer (immediate supervisor) Satisfactoriness Survey Instruments; and (d) Curriculum Adequacy Survey Instruments.
3. To develop an output system that could easily be utilized for program improvement and accountability.

THE INSTRUMENT

The instrument, to gather information for one-year Occupational Patterns and Program Assessment Survey, focused on obtaining information concerning the following Agribusiness program areas: (1) First-Job Employment; (2) Present-Job Employment; (3) Unemployment; (4) Continuing Education; (5) Job Placement; (6) Quality and Benefit of Program; (7) Quality and Benefit of Instruction; (8) Recruitment and Orientation; (9) Need for and Quality of Program Resources.

THE SAMPLE AND RETURN

Every 1973-74 Secondary Agribusiness Education terminee (graduates and dropouts) was included in the first one-year Occupational Patterns and Program Assessment Survey. Of the 5,109 graduates and dropouts during the 1973-74 school year, 1,352 (26.5 percent) returned the questionnaire.

THE RESULTS

Based on the one-year Occupational Patterns and Program Assessment Survey, numerous recommendations were made to continue the outstanding development of Alabama's secondary Agribusiness Education programs. The following offers a review of four key recommendations with a summary of critical incident data utilized in rationalizing the recommendations:

- Recommendation: Systematic activities need to be initiated to improve the recruitment and orientation activities prior to student enrollment in the Agribusiness program.

Critical Incident Data:

- Approximately 68 percent of the terminees reported that during the time they were taking their Agribusiness program, they were not sure or they had no intention of getting a job in the area they were studying.
- One hundred sixty-one ninth grade, 190 tenth grade, 159 eleventh grade, and 241 twelfth grade Agribusiness students dropped out of school during the 1973-74 school year.
- Approximately 29 percent of the terminees felt they did not have adequate job or occupational information and school experiences to make a realistic career choice.
- Large numbers of students who studied in certain occupational objective areas, where manpower studies indicate jobs exist, were not securing jobs in directly related or somewhat related fields.

(Concluded on next page)

Vocational education terminee follow-up studies constitute one of the most valuable techniques for assessing the outcomes of Agribusiness Education programs. Not only do follow-up studies offer an excellent approach for dealing with phases of accountability, they offer an excellent vehicle for program improvement.

Recent hearings and legislation in Congress further demonstrate the necessity for more accountability in all phases of vocational education. Stringent accountability in vocational education is about to be mandated if vocational educators do not begin to realistically deal with problems.

Alabama has moved ahead within its accountability efforts by developing and implementing a statewide follow-up system for its secondary Agribusiness Education terminees (graduates and dropouts). Working in a coordinated effort to accomplish this needed task were Alabama's Agribusiness Education supervisory staff, the State Research Coordinating Unit (RCU), the Occupational Research and Development Unit (ORDU) at Auburn University, and the teacher education staff at Auburn University.

Primary reasons the decision was made to initiate a statewide follow-up study of the secondary Agribusiness Education terminees from a central location were to: (1) gather comparable statewide information on all programs that could be used for accountability and program improvement purposes; (2) validate follow-up information gathered by teachers; and (3) establish a reliable and valid data base from which to project realistic objectives in the newly created Management by Objectives Plan (MBO) being installed in the State Department of Education.

CONTINUED A FOLLOW-UP SYSTEM

- Students had an unrealistic perception about the pay scale for persons working in Agribusiness related occupations as evidenced by their comments about their job mobility.
- Only 2.7 percent of the terminees felt their Guidance Counselor and 12.6 percent of the terminees felt their Agribusiness teacher influenced them most in selecting their Agribusiness program.
- Five percent of the terminees indicated if they had it to do over again, they would not take a vocational program.
- Only 24.3 percent of the terminees who were working in non-related areas sought related employment beyond daily walking or driving distance from home.
- Recommendation: The instructional delivery system appears effective and should be continued and promoted at this point in time.

Critical Incident Data:

- Approximately 80 percent of the terminees rated the quality of teaching by their instructors to be from "Good" to "Excellent." Only 5.0 percent rated the quality of teaching as "Poor" or "Very Poor."
- Approximately 81 percent of the terminees rated the instructor's interest in their classwork from "Good" to "Excellent." However, 4.6 percent rated their instructor's interest in their classwork as "Poor" or "Very Poor."
- Approximately 77 percent of the terminees working in a job directly related to their training rated their instructor's knowledge about their field of study from "Good" to "Excellent." Only 5.9 percent of this group rated their instructor's knowledge of their field of study

as "Poor" or "Very Poor."

- Approximately 80 percent of the terminees reported they would take the same Agribusiness program over again, while 5.0 percent indicated they would not take a vocational program.
- Approximately 79 percent of the terminees whose first job was directly related to their training reported they were from "Excellent" to "Well Prepared" for that job as a result of their Agribusiness course. Only 3.6 percent of the terminees reported they were "Poorly Prepared" for that job as a result of their Agribusiness program.
- Recommendation: An immediate systematic plan at the state and local level needs to be developed and implemented to provide job placement services for all Agribusiness terminees.

Critical Incident Data:

- More than 67 percent of the terminees who were seeking full-time employment upon leaving their Agribusiness program and beginning actively seeking full-time employment reported that their Agribusiness teacher did not attempt to help them get a job.
- Only 3.5 percent of the terminees reported their Agribusiness teacher got them their first job after they left their Agribusiness program.
- Only 10.5 percent of the terminees who were working while in high school reported their Agribusiness teacher got them their job.
- Only 1.1 percent of the terminees who were working while in high school noted their counselor got them their job.
- Of the responding terminees 12.1 percent were unemployed and actively seeking a job.

—After leaving their Agribusiness program, approximately 16 percent of the terminees indicated it took them nine or more weeks to secure their first full-time job after they began actively seeking full-time employment.

- Recommendation: Even though terminees' status and job relatedness to training percentages are somewhat in line with other states, every effort needs to be made to increase program efficiency by attempting to get more terminees in directly related and somewhat related jobs.

Critical Incident Data:

- After termination from school for about one year, the terminnee job status was as follows: 46.0 percent employed and not attending school; 14.0 percent employed and attending school; 21.8 percent continuing education but not employed; 5.2 percent in military service; 6.2 percent unavailable for employment; and 12.1 percent unemployed and actively seeking employment (percent added over 100 due to rounding).
- Of the total responding terminees, 9.4 percent worked in full-time or part-time first jobs directly related to their training, 26.2 percent worked in first jobs somewhat related to their training, while 31.6 percent of the terminees worked in first jobs not related to their training.
- More than 67 percent of the terminees who were seeking full-time employment upon leaving their Agribusiness program and beginning actively seeking full-time employment reported that their Agribusiness teacher did not attempt to help them get a job. ◆◆◆

CONTINUED LEADER . . .

celebration. His son, a graduate of Joliet Junior College, was receiving his B.A. from the University of Illinois that day.

Max and his wife, Wilma, concerned with continuing quality of agriculture education in this country have, typically, been active in assuring, insofar as possible, that it will not abate. Their youngest son, Mark, started his teach-

ing career at Morris High School this year. Their eldest son Kurt, farms the home farm in Neponset.

Although Max never mentions his age, one may assume that he is nearing the magic year of 60; however, his appearance is more that of a 45-year-old and the stamina he exhibits would do credit to a 25-year-old. He talks of being satisfied in retirement with help-

ing farm the home place, but those who know him best seriously doubt that he will disappear even for a short time from the public eye. Many suspect that he will be one of the most sought after speakers on a national circuit. Certainly agriculture and related fields have not heard the last from Max Kuster, "Mr. Agriculture in Illinois." ◆◆◆

EXTENSION EDUCATION AND AGRICULTURAL EDUCATION—PARTNERS?

What does "Extension Education" mean? Where would you send a student who wanted to major in it? Do you know about a preservice program to prepare Cooperative Extension Agents? If you have the answers to such question, then you are probably in the minority. Such programs are hard to find at the university level.

The Agricultural Education Department at the University of Arizona has recently begun to take these questions seriously. After seven years of developing and evaluating a strong competency-based program to prepare teachers of vocational agriculture, Arizona is developing a similar program to prepare Cooperative Extension Agents.

And why not? Both teachers and agents are professional educators with planned programs. Their skills, methods and techniques overlap. The similarities are many, yet agents and teachers are not the same.

Differences Between Vocational Agriculture and Agricultural Extension

Teachers spend a considerable amount of structured time in the classroom with more formal relationships between learners and teachers. Classes are age-specific, the curriculum tends to be sequential, and much of the evaluation carried out involves testing and grading learners.

Extension agents, conversely, do most of their work in the field, often as indirect educators who work with mixed age groups in more informal relationships. The diffuse, nonsequential curricula of Extension educators are often served cafeteria style. Learners largely set their own objectives and if those objectives are not met, the learners often do not return. Tests and grades are seldom used.

A program to prepare Extension agents, then, has to take into account the differences as well as the similarities between vocational and Extension education. So to guide development of the Arizona Extension Education program, a set of principles has been implemented.

Arlen Etling
Ass't Professor, Agricultural Education
Department
Personnel Training Specialist
Cooperative Extension Service
University of Arizona

Principles for Arizona's Extension Education Program

1. *Skills, knowledge and attitudes stressed should be those of effective Extension agents.* A departmental research study has identified those skills, knowledge and attitudes (competencies) needed by beginning Extension agents in Arizona. Since courses in Extension Education are organized around these competencies, by the end of the senior year students should be prepared in each of the 56 identified areas.

2. *Learning techniques should resemble those used by agents.* Since learners are often influenced more by *how* than by *what* they are taught, students preparing for Extension positions should learn through techniques used by agents. Therefore, work in small groups, individual study, audiovisual techniques and learning-by-doing are more important learning techniques than lectures and tests.

3. *Extension Education courses should be practical.* Extension clients are less tolerant of academic approaches than students in educational institutions. So whenever possible, field trips, demonstrations and skill practice are employed. When a field situation being studied cannot be visited, simulations and role plays are used.

4. *Flexibility is desirable.* Because individual needs, interests and abilities are recognized, individual freedom and responsibility are encouraged. Options are provided, dialogue is sought and learning contracts are used when appropriate.

5. *Self-training should be emphasized.* Since agents in the field are often faced with requests and opportunities beyond their immediate skills or knowledge, a model for self-training is outlined and practiced by students in the program.

6. *Creativity is important.* Opportunities are provided to develop personalized teaching materials. Students are led to stimulate each other and engage in critical analysis and constructive criticism in an open atmosphere.

7. *Informal student-professor relationships* are encouraged. Extension agents can seldom rely on their degrees, academic rank or grades to control their clients. Professors in Extension Education, then, must rely on openness, competence and a genuine appreciation of learners' needs in order to carry out the teaching process.

8. *Evaluation approaches should emulate Extension approaches.* Less emphasis is placed on grades. Students are encouraged to critically analyze and evaluate their courses, professors, the competencies and each other. They take an active part in determining their final grades and are exposed to a variety of evaluation instruments useful to Extension.

Program Advisory Committee

An advisory committee was formed to help develop a total Extension Education program based upon these principles. Representatives include teaching faculty, Extension specialists, students, county agents and Extension administrators. At regular meetings the committee suggests resources and priorities and responds to ideas presented. Perhaps the most important contribution of this group is to keep the program relevant and pertinent. Based on the committee's advice, the components of the Extension Education program have evolved.

Program Components

1. Recruitment takes place continuously. High school and junior college students, as well as students at the University of Arizona, are made aware of the program.

2. *Selection* is a two way process. Students select the program whose activities provide occasions to help the students evaluate that decision.

3. Once in the program *orientation* is provided through a seminar for enrollment.
(Concluded on next page)

CONTINUED EXTENSION EDUCATION . . .

tering students. An overview is given of the Extension Education Program, the Agricultural Education Department, the College of Agriculture and the Cooperative Extension Service.

4. *Courses* are provided in Extension organization and philosophy, teaching-learning methods, leadership development, mass media and audio-visual approaches. Students are encouraged to declare a dual major in a subject matter area such as horticulture or animal science.

5. Extracurricular *activities* which support coursework are encouraged.

6. During the senior year a *supervised field experience* places students with an agent in the field to learn while working in a county Extension

program.

7. During the last semester students return to campus to *develop competencies* identified as personal needs during the field experience. Normally this component is offered as an individual study or workshop.

8. Also during the last semester, students are helped with *placement and preemployment orientation*.

9. Finally, the Department provides *follow-up* for graduates during their first year on the job in Arizona Extension in the form of inservice workshops and professional improvement activities.

A Comprehensive Program

Although in its infancy, this competency-based agent preparation pro-

gram shows promise. Enrollment has grown rapidly and student evaluation indicates that the program is well received by them. The first students to be placed in field experience situations have been very positively received by their agent-supervisors.

Program strengths include the competencies derived from research, a pragmatic orientation to field methods and activities, and a flexible approach which allows for personalized learning experiences guided by a portfolio kept by each student. This undergraduate program is already providing direction for an emerging graduate program in Extension Education as well as serving as an inspiration for inservice training activities for Arizona Extension Agents.

CONTINUED AGRICULTURAL OCCUPATIONS . . .

Reference. In this section the references are listed with their source. A coding system devised to indicate references is used to identify those used in the teaching plans.

School Facilities, Equipment, and Supplies. This information provides the applied biological and agricultural occupations teacher with a source for major items which are required to operate the program.

Audio Visual Materials. This section includes a listing of currently available audio-visual materials for use in teaching the respective subject matter areas.

Teacher Competencies and Training Available. A brief review of sources where the teacher could secure additional skills to assist in delivering a quality program is shown in this area.

The project staff drew heavily from program planning materials from other states, including Ohio, Oklahoma and Texas, as well as business and industry in Illinois. As each phase of the guides was completed, it was submitted to the steering committee for a final review before printing.

Upon completion of the program planning guides, the in-service effort began under a project entitled "Workshops for Applied Biological and Agricultural Occupations Program Planning Guides."² This in-service activity had two major objectives: (1) to provide a series of workshops for applied biological and agricultural occupations teachers on the procedure of development, content, and use of the seven program planning guides; and (2) to provide a copy of each of the seven guides to each teacher who attended the workshops. The workshops were structured in such a manner that the authors of a planning guide would present their

guide to participants. In all cases, one or more of the major authors have been or are currently teaching Applied Biological and Agricultural Occupations. During the 1975-76 year, 255 applied biological and agricultural occupations teachers, community college teachers, teacher trainers, and state office staff members have attended six workshops conducted throughout the state.

At the completion of each workshop session the participants were asked to evaluate the various aspects of the meeting. "A stimulating start to planning . . ." "Very Good Material—organized to be useful," "I have a definite need for what I have gained today . . ." are representative of comments made by the participants. Tabulation of responses received to date give strong support to the merit of the program planning guides and workshops.

CONSIDERATION FOR THE FUTURE . . .

An evaluation to determine utilization and adoption of the program planning guides by the applied biological and agricultural occupations teachers is currently being encouraged. This kind of assessment will provide the project staff with essential data about the value of the program planning guides and workshops. ◆◆◆

1. "Development of Teachers' Guides and Student Instructional Material for Seven Selected Applied Biological and Agricultural Occupations Units" was completed by the Agricultural Industries Department, School of Agriculture, Southern Illinois University, Carbondale, Illinois and funded by the Professional and Curriculum Development Unit, Division of Vocational and Technical Education, State of Illinois.

2. "Workshops for Applied Biological and Agricultural Occupations Program Planning Guides" was completed by the Agricultural Industries Department, School of Agriculture, Southern Illinois University, Carbondale, Illinois, and funded by the Professional and Curriculum Development Unit, Division of Vocational and Technical Education, State of Illinois.

CONTINUED BENEFITS AND RESPONSIBILITIES . . .

b. The employer's report of the student's attendance and performance on the job

c. The instructor's grades of work performed in the related class and on the job

d. The agricultural coordinator's report of his consultations with employers

e. The agricultural coordinator's report of his observations of the student on the job

Responsibilities of the Employer

1. To provide training in job entry skills and a variety of learning experiences in the student's chosen vocational field as outlined in the student's individual training plan

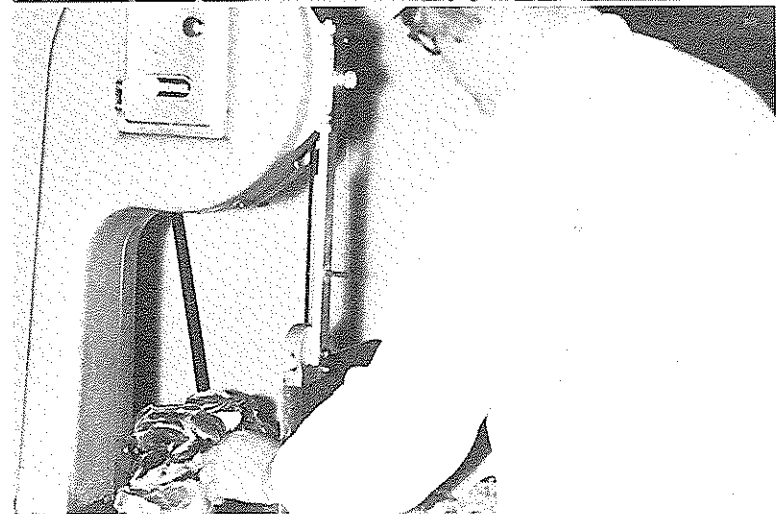
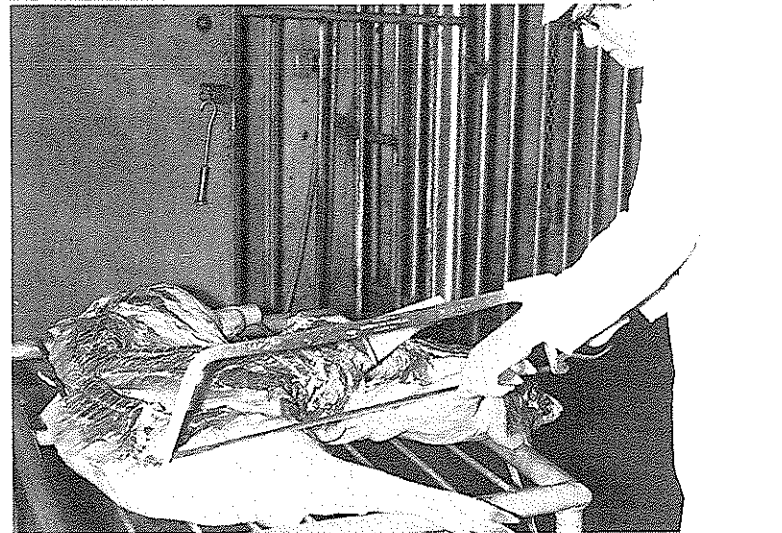
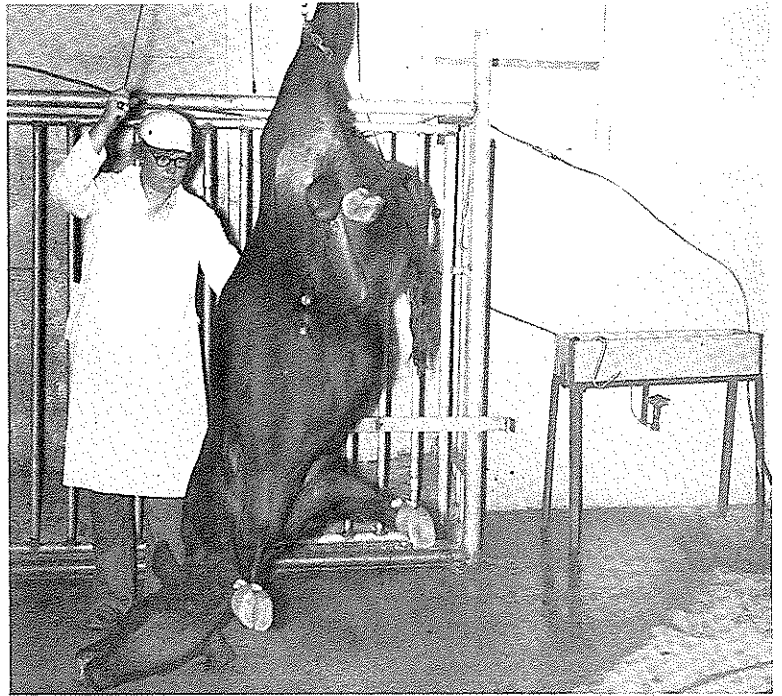
2. To provide supervision of the student while on the job

3. To record the student's attendance and keep the agricultural coordinator informed of his conduct and progress on the job

4. To provide minimum wage, obey hours laws, and safety regulations, and provide adequate insurance (workmen's compensation) ◆◆◆

STORIES IN PICTURES

by
Paul
W.
Newlin



Jimmy White, Perry, Ga., 1976 Southern Region Winner of Placement in Processing, demonstrates his meat processing skills. (Photo courtesy of J. E. Dunn, Ga. Assoc. FFA)

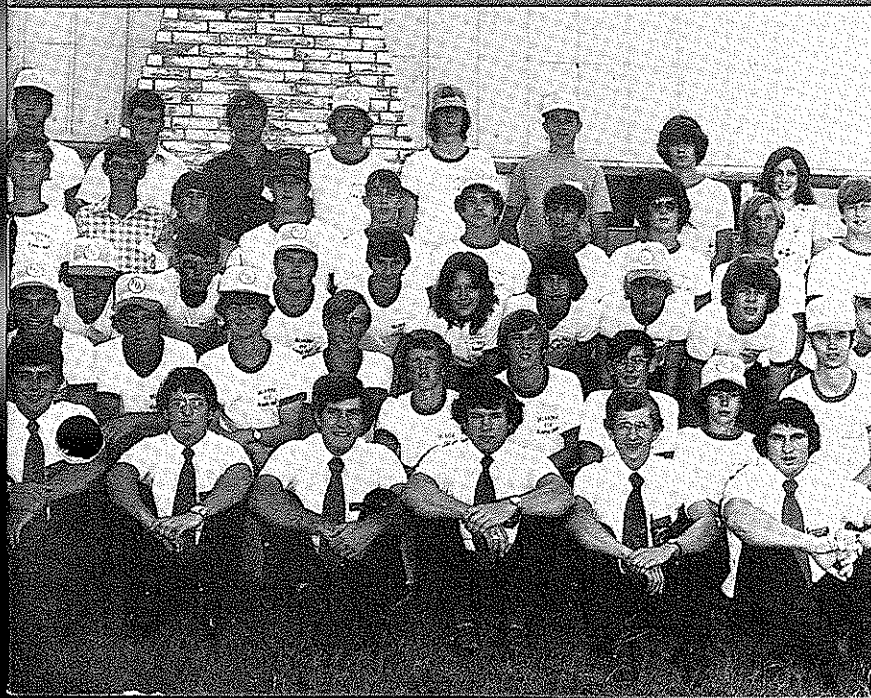


Students in Meat Processing at J. W. Nixon H.S., Laredo, Texas, shown weighing carcass. (Photo courtesy of Gerardo Sepulveda, Laredo)

David Gresham, Winder Barrow FFA Chapter, Ga., 1974 Georgia State Winner in Placement in Processing. (Photos courtesy of J. E. Dunn)
top photo: Meat Processing begins on the slaughtering floor.
center photo: Cutting up a carcass is a necessary skill to learn.
bottom photo: Cutting the proper portions of meat for the customer is important.



Theme Camping and Summer Activities



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