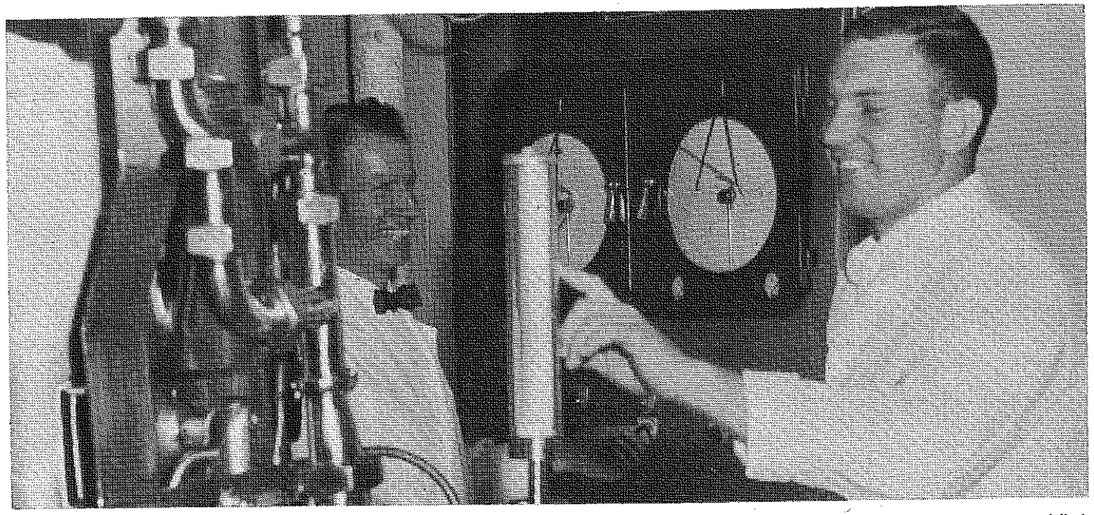
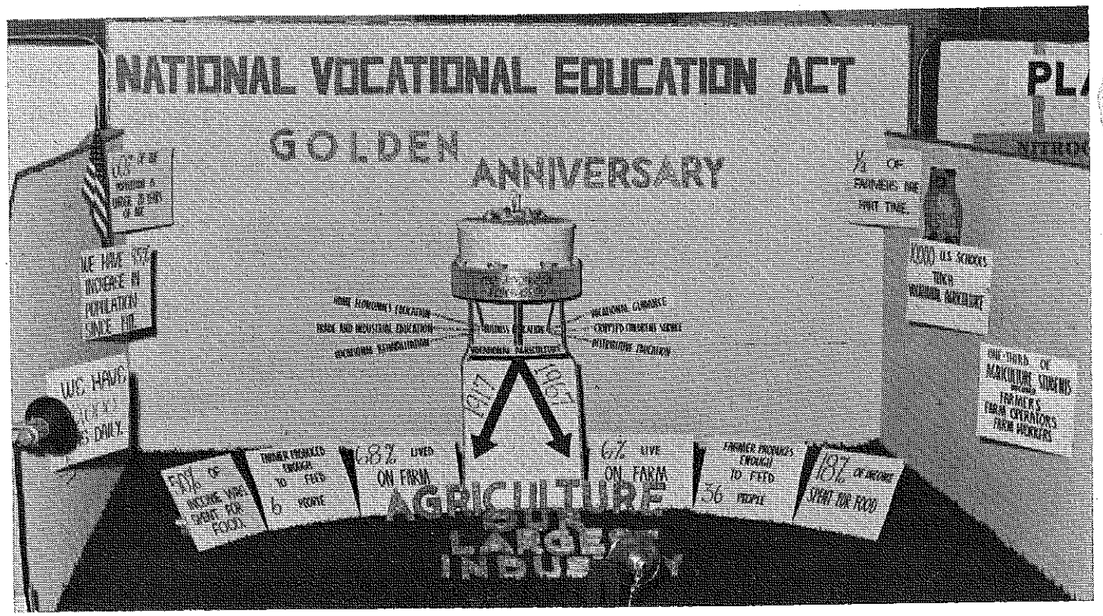
Stories in Pi

GILBERT S. GUILER

Ohio State University



Agriculture has become a vast and complex industry employing many persons off the farm in agriculturally related occupations at skilled, technical, and professional levels. Gene Merritt (right), dairy science student at Clemson University, is shown as he and his instructor discuss the control and operation of high temperature pasteurization equipment. (Photo by Wilbur McCartha, State Department of Education, South Carolina)

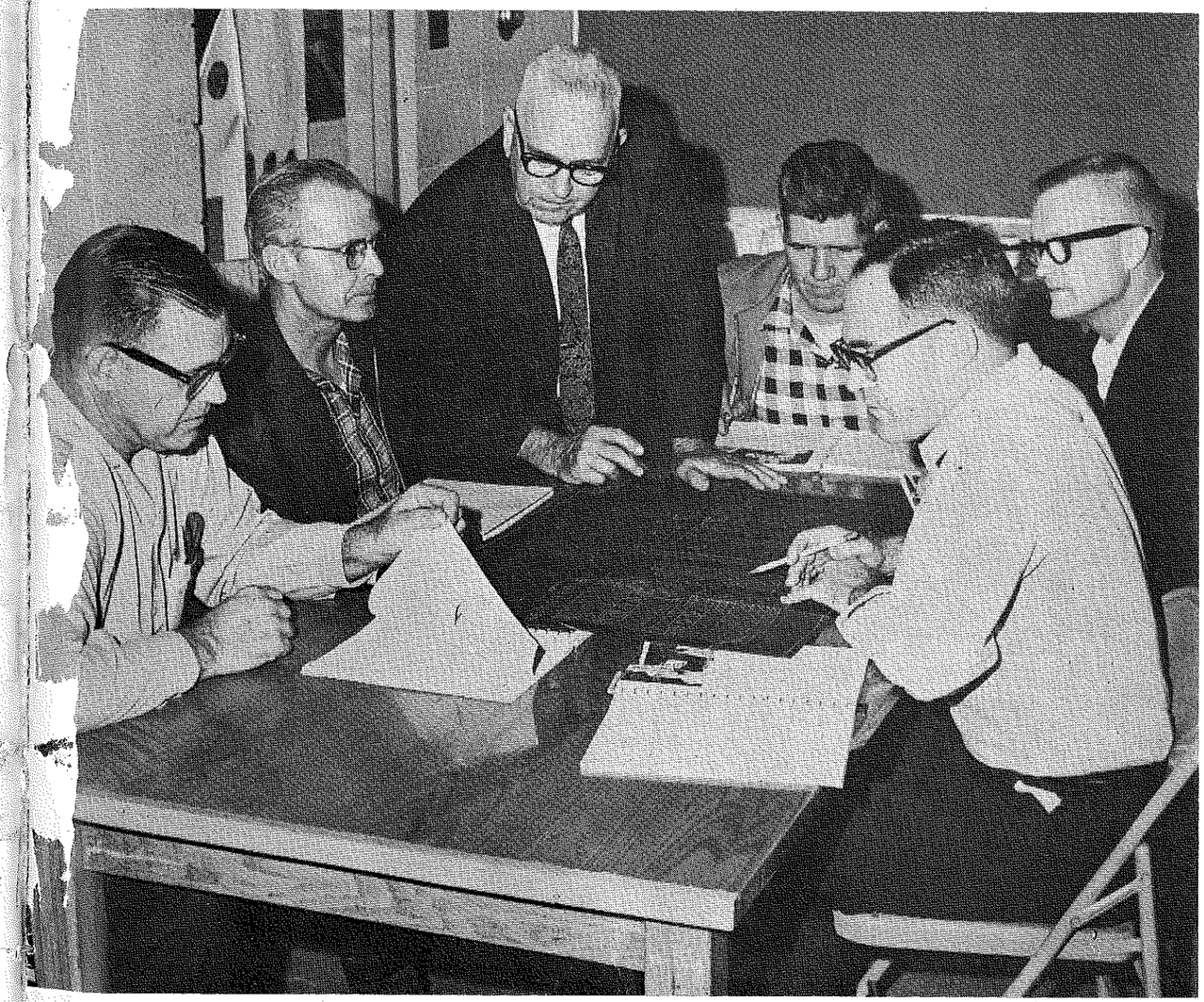


The Golden Anniversary exhibit of vocational agriculture was developed by the Mobile County Vocational Agriculture Department in Alabama. The development of the past 50 years as shown in this exhibit attracted much attention. (Photo by Glover Pugh, Vocational Teacher, Alabama)

AGRICULTURAL EDUCATION

Agricultural Education

lume 41 August, 1968 Number 2



Featuring—

ADULT EDUCATION

Index to Volume 40 (page 38)

THE
AGricultural EDucation
MAGAZINE

Vol. 41 August, 1968 No. 2

The professional journal of Agricultural Education. A monthly publication managed by an Editorial Board. Publication office at The Lawhead Press, Inc., 900 East State St., Athens, Ohio 45701.

TABLE OF CONTENTS

Subscription price, $3 per year. Foreign subscriptions $3.25. Student subscriptions in groups one address, $1 for October-May. Single copies .50 cents. In submitting subscriptions designate new or renewal and address including zip code. Send all subscriptions to T. L. Faulkner, Business Manager, AGRICULTURAL EDUCATION MAGAZINE, State Department of Education, Montgomery, Alabama, 36104.
Articles and pictures should be sent to the Editor or to the appropriate Special Editor.
Second-class postage paid at Athens, Ohio.

EDPRESS

Editorials

From the Editor . . .

Some Relevant Issues

J. Robert Warmbrod

Today learning throughout life is as much a necessity as it is a prerogative; in the future learning throughout life will be imperative. Traditionally adult education—education for persons who have completed or left full-time schooling—has been a vital part of public school education in agriculture. Considering the meager time, effort, and money devoted to adult education, the fact that over 40 per cent of the persons served by agricultural education are adults is noteworthy, and in a real sense, evidence of the profession's dedication to and support of adult education.

By and large, programs of adult education in agriculture are organized and taught by high school teachers of agriculture in addition to their duties as teachers of high school students. With the new program of vocational education in agriculture—broadened purposes, new programs, new clientele—such an arrangement is not likely to produce educational programs appropriate for all adults whose vocational or avocational interests involve knowledge and skills in agricultural subjects. The following issues are relevant as broadened and improved programs of adult education are developed.

Is the high school the appropriate public school agency for adult education? Generally, high schools have not accepted adult education, including adult education in agriculture, as a major function. Relatively few high school teachers of agriculture have contractual responsibilities for teaching adults. Many teachers who conduct adult programs do so because of their commitment to the belief that adult education is part of a complete program of vocational education in agriculture. Experience indicates, however, that high school administrators and boards of education will support in principle, and to some extent financially, successful programs of adult education in agriculture.

But on the other hand, many of the emerging institutions that place a high priority on occupational education—

(Continued on next page)

Guest Editorial . . .

Continuing Education in Agriculture

C. M. Lawrence

Agriculture is more than farming! Therefore, adult education in agriculture is more than young farmer and adult farmer education. Patterns of operation in agricultural production have changed drastically in recent years. With the broad tasks given us under the Vocational Education Act of 1963, it is mandatory that continuing education be provided for those adults who are employed in all agricultural occupations. In past years, our primary objective has been to provide education for farm owners and operators and for those preparing to become owners and operators. This will continue to be an important phase of our educational program for adults. However in large farm operations of the future, the skilled and technical workers should be our primary concern.

As farms become more industrialized, the key word for instructional programs for the farm owner and operator will be *management.* It has been said that we are witnessing a dramatic new revolution in agriculture which many have termed a "management revolution." If educational programs for young farmers and adult farmer are to be successful and have real meaning, we must concentrate our efforts on "management strategies" rather than the traditional "farm management."

If we are to accept the responsibility of continuing education for all persons in agriculture, we must provide for those who are employed or who are preparing for employment in the off-farm agricultural occupations as well as for those workers in production agriculture. It has been stated that as many as one-third of our labor force can be categorized in one of these areas. At the present time, we are meeting the needs of a very small percentage of agricultural workers. We must think in terms of education in agriculture being a continuous process and should gear our educational system for adult education on a large scale with flexibility to meet all types of situations. We must not let ourselves be "boxed in" by traditional thinking concerning organizational patterns for instruction.

Agriculture is big business! The demand for adult education in agriculture at all levels—training and retraining for specific skills as well as avocational education—will be big business in the 1970's. It is our responsibility to think big in terms of our planning for future programs of continuing education in agriculture for *all* adults.

Mr. C. M. Lawrence is Director of Agricultural Education, State Department of Education, Tallahassee, Florida.

From the Editor . . .

community colleges, junior colleges, technical institutes, area schools—have adult education as a major function. These institutions are committing money, staff, and facilities for adult education in all occupational areas as well as general education. Actually, these emerging post-secondary institutions make it possible for high schools to be more adolescent oriented than before. Most of us will agree that the expansion and improvement of adult education in agriculture is dependent upon more adequate financing, more full-time staff, a more specialized staff, and adequate facilities. It appears then that post-secondary institutions have several advantages over high schools as the public school agency most capable of providing effective programs of agricultural education for adults.

Are high school teachers of agriculture well qualified to teach adults? Some persons contend that high school teachers are not sufficiently specialized and up-to-date in technical subject matter to teach adults. This argument is heard frequently when it is suggested that the teacher's primary role is organizing courses and scheduling specialists as speakers for young and adult farmers. This position accentuates teacher competence in subject matter while ignoring or de-emphasizing teacher competence in teaching-learning processes. Does this imply that teaching adults consists primarily of imparting technical knowledge? We are well aware that an effective adult program involves more than classroom instruction and surely more than lectures by specialists. Several articles in this issue attest to the fact that high school teachers have the necessary technical and professional competence for teaching adults. Particularly appropriate is the article describing the course on the economics of corn production taught by Eldon Witt in Illinois.

Are pre-service and in-service teacher education programs adequate for preparing teachers of adults? Pre-service teacher education is highly oriented toward high school programs. In many cases only incidental attention is given to adult education. We are now developing programs to prepare teachers for post-secondary technical education programs in agriculture. Shouldn't we develop programs specifically designed to prepare and upgrade teachers of adults? Are there valid reasons why teachers of adults have to be prepared also as high school teachers? Is there evidence indicating that successful teachers of adults must also teach high school students—or vice versa?

Will adult education in agriculture be broadened to include education for all occupations involving knowledge and skill in agricultural subjects? We continue to talk and write of adult education in agriculture as young farmer and adult farmer education. If adult education in agriculture is to be what it can and should be, greater effort must be made toward developing programs specifically oriented toward adults preparing for or employed in off-farm occupations. The article by Fred Dillner in this issue describes how this problem is being approached in Pennsylvania.

What is the major objective of adult education? Is it the imparting of specialized knowledge and skill or is it to develop further interest in and ability for learning throughout life? Today we put little trust in the permanency of technical knowledge. A major objective of adult education in agriculture should be to develop the abilities of adults to learn continually throughout life by themselves as well as through formal, public school sponsored programs. If that is the case, the issues of who teaches adults and how adults are taught assume equal importance with what they are taught.—JRW

Themes for Future Issues

September	***Agricultural Education for Persons with Special Needs***
October	***Agricultural Education in City Schools***
November	***Supervision in Agricultural Education***
December	***Supervised Occupational Experience in Agricultural Education***
January	***Teacher Education***
February	***Agricultural Education in Area Schools***
March	***Student Organizations***
April	***Teaching — Instructional Materials***
May	***Program Planning and Curriculum Development***

REPORT OF THE ADVISORY COUNCIL ON VOCATIONAL EDUCATION, 1968

The first report of the Advisory Council on Vocational Education mandated by the Vocational Education Act of 1963 has been published under the title *Vocational Education: The Bridge Between Man and His Work.* The report includes three publications: Publication 1, "Highlights and Recommendations from the General Report;" Publication 2, "General Report of the Advisory Council on Vocational Education, 1968;" and Publication 3, "Summary and Recommendations Adopted from the General Report."

The three reports have been published by the Committee on Labor and Public Welfare of the United States Senate under the title *Notes and Working Papers Concerning the Administration of Programs Authorized Under the Vocational Education Act of 1963, Public Law 88-210, as Amended,* March 1968. A copy of this publication is available from:

Subcommittee on Education
Committee on Labor and Public Welfare
United States Senate
Washington, D.C.

Adult Education in Agricultural Supplies

FRED D. DILLNER
Teacher of Agriculture
Shippensburg, Pennsylvania

When teachers of agriculture are asked to comment on adult education, automatically they begin by talking about their experiences with young and adult farmer classes. Yet one of the largest areas of vocational education responsibility has been overlooked. I am speaking of programs designed to provide instruction for adults who are employed in agricultural supply businesses.

The Early Concept

The early concept of vocational education in agriculture held that it was occupational training to enter or advance in agricultural production. Establishment in farming was the main goal. Teachers of agriculture observed tremendous advancement in students enrolled in high school instructional programs. But upon graduation from high school the program for many seemed to terminate. However, problems of technology, expansion, and the need to make management decisions continued. The things to be learned were no longer workbook exercises, no longer dad's or granddad's problems, but real needs. Agriculture teachers responded by developing young and adult farmer programs having as their foundation the needs of the learners. We take pride in ourselves, as teachers, when we have high school classes and classes for young and adult farmers. We say we have a complete program in agriculture—but do we?

Fred D. Dillner, the author of this article, is President of the Pennsylvania Vocational Agriculture Teachers Association. Course materials described in this article have been published as a part of a community action project under the Higher Education Act of 1965 which was directed by Glenn Z. Stevens and H. F. Doran. Revised copies of the course materials may be obtained from the Department of Agricultural Education, The Pennsylvania State University, University Park, Pennsylvania 16802.

The Modern Concept

With increased emphasis on instruction to prepare high school students for all areas of agriculture in addition to farming, there will surely need to be follow-up for these students. The need for adult education in all types of agribusiness will increase. At the 1967 NVATA Convention in Cleveland, Ohio, I attended a dinner of the presidents of state agriculture teachers associations. At this dinner the president of each state organization told of new programs or innovations in agricultural education in their state. Seventy-five per cent of those reporting mentioned high school classes in agricultural supplies, agricultural mechanics, or ornamental horticulture. Only one state reported doing anything with adults in agribusiness other than farming.

Instruction In Agricultural Supplies

The purpose of this article is to share with you some of the experiences and results of a program of adult education in agricultural supplies. During 1967 courses planned in cooperation with teacher educators were taught in two high schools in Pennsylvania. In both communities owners, managers, and employees showed interest by enrolling in the courses and by requesting individual help with specific subject matter and decision-making needs.

The first course I taught at Shippensburg High School was titled, "Human Factors in Management." Six problem areas were taught in twelve hours of class sessions. Those enrolled included managers, department managers, field representatives, salesmen, and key workers in feed, seed, fertilizer, agricultural chemicals, and farm and industrial machinery businesses. Their schooling varied from eighth grade to two years of college. Ages varied from 23 to 55 years. It was a heterogenous group. They were homogeneous in only one important aspect—their desire to learn.

This might seem like a hodge-podge class, but the variety added spice and interest to the discussions. All of us are conscious of the fact that a tremendous amount of learning takes place among learners. We also know that most business problems may have no one clear cut solution. Most of the solutions have alternatives and involve complicated side issues. Discussions with this group drew interest from all angles and led to understanding basic principles.

The older members seemed to respond more freely, probably because of their experience. Just as important as the "how" and "why" answers and solutions offered by the experienced persons were the analytic questions of "what makes this happen or causes that to change." When the desire to learn is aroused and a good environmental setting is provided the exchange of ideas flows like a bubbling brook. Age and experience are of little importance. The learner is engrossed in the thought patterns of "How can I apply what I've just learned to my business or occupation."

Need for Instruction

You might ask "What can a teacher of agriculture offer in the way of education to a person already established in an agricultural supply business?" In many instances we assume that those already in positions of leadership need no help and that they have a complete understanding of business management and have at their command the competencies necessary to develop and promote a successful business operation. My experience with men in these areas of responsibility has shown that this is not the situation. Many men in leadership positions want to improve themselves

(Continued on next page)

Dr. Robert Pfeffer (left), local veterinarian and member of the course on Dairy Cattle Nutrition, discusses the effect of feed on udder health with Fred Dillner, course instructor.

and welcome the opportunity to join others in such an educational venture.

It is true that leadership conferences and business seminars are held for some of the top men employed by cooperatives and privately owned businesses and that field men and sales representatives regularly attend conferences. Many managers, department managers, and supervisory personnel seldom have the opportunity to "rub elbows" with other businessmen in related agribusiness firms. The classroom atmosphere, with the interjection of a few good questions by a teacher, may quickly place the men in a frame of mind where they are eager to respond and share their reactions to the questions at hand.

Course Content

The course on "Human Factors in Management" consisted of the five following problem areas:

—What are the functions involved in managing an agricultural supplies business?
—What is a successful business? What factors contribute most to its success?
—What factors most frequently cause business failure?
—How can problems encountered in an agricultural supplies business be identified and simplified?
—What human factors are most important in managing and operating an agricultural supplies business?

Worksheets consisting of management evaluations and sample problems involving decision making were used as part of the teaching procedure. Discussion was developed from the worksheets, and time was provided for the learner to ask questions and develop his own thought patterns. The program materials attempted to define, develop, and improve the attitudes, values, and skills necessary in managing oneself, other personnel, and the trade or business. The course emphasized that the most important part of the word management is "man"—man's ability to cope successfully with the many decisions or adjustments that must be made in today's business activities.

Evaluation

At the completion of the course the men were given an evaluation sheet and asked if they might be interested in taking another course. A large number indicated an interest in feed nutrition. A program was then developed by the teacher with the men advising as to what problem areas would be of most value. A second course, "Dairy Cattle Nutrition," was designed and taught to the group during the winter of 1968. Eighty per cent of the class consisted of persons enrolled for the second year. Another evaluation was taken and again the majority indicated they would like to enroll in a course on credit management. This will probably be the topic for next year's class.

Experience has shown that there are needs and that an education gap does exist with those employed in the agricultural supply industry. These men are searching for information. They have indicated that the local high school is an excellent place to meet and that the teacher of agriculture can provide the educational experiences they need.

Courses involving agribusiness have tremendous latitude. They develop a working relationship which can benefit the farmer, the businessman, and the teacher. The teacher, through his association with the businessman gains

On-job instructional visits during the course on Human Factors in Management aid a feed mill owner and help in selecting topics for the next year's course.

greater insight into business and production knowledge. The men requested and received individual instruction visits at their places of business throughout the year.

A Complete Program

Is it not just as important to provide training for persons in agricultural supply businesses as it is to provide instruction for farmers? Is our professional competence and our experience in leadership so limited that we can not expand our vision to include these adults? We already have achieved across the nation excellent results in teaching some of the new instructional areas to high school students. Is this where we draw the line? Will we give no further assistance?

Do you want to see what a complete program of agriculture can do for your area? Organize and teach a class of adults in agricultural supply businesses and you will find it extremely interesting, challenging, and rewarding.

THE COVER PICTURE

Adult education programs in agriculture at Conway High School, Arkansas, are conducted in conjunction with the Petit Jean Vocational-Technical School, Morrilton, Arkansas. During the past four years courses have been held in arc and oxy-acetylene welding, veterinary science, livestock management, and agricultural related occupations. The cover picture shows a group of adults enrolled in a course in Advanced Blueprint Reading in 1967. (Photo supplied by James Mullen, Director of Extension Programs, Petit Jean Vocational-Technical School.)

A New Approach . . .

Adult Farmer Education by Television

J. B. BOONE, Supervision
North Carolina Department of Public Instruction

J B. Boone

Technological advances in the field of agriculture have made it imperative that teachers of agriculture offer more depth, scope, and competence in teaching adult farmers. Farming and ranching have become more specialized, therefore more specific instruction is needed.

Special Instructors

Agricultural educators in North Carolina have recognized for many years the need for resource people to aid the teacher of agriculture in dealing with specific problems. Since 1962 the State Board of Education has allocated funds to pay salaries and travel expenses for special instructors of adult short courses.

Early in the Adult Farmer Specialized Instructor Program a shortage of capable resource people was recognized. The few available could not possibly fill the need. After a study of means to relieve the shortage, it was decided to try a pilot program using one special instructor and the medium of television to carry the information into several adult farmer classrooms simultaneously.

Educational Television

Television was first used in adult farmer instruction in North Carolina in February, 1966. At that time North Carolina had in operation two educational transmitters located approximately 150 miles apart. The lessons, each 30 minutes in length, were recorded on video tape. After a lesson was televised at one transmitter, it was shipped to the other transmitter for showing. During 1966-67, the two educational transmitters were linked by means of microwave stations and simultaneous telecasting was initiated. Lessons were still recorded on video tape, however, and additional use was obtained by telecasting on a commercial transmitter in an area not covered by the educational transmitters. Further use of the lesson material was obtained by kinescoping all twenty lessons on 16 mm film and sending films to areas not covered by the television transmitters.

How Teachers Use Television

Since the beginning of instruction by television in North Carolina, teachers of agriculture have been involved in selecting courses to be taught, determining course content, responding to evaluative questionnaires, and conducting evaluative group discussions at the end of each series of lessons. Teachers using the television lessons for the first time are brought in for an orientation meeting at which time suggestions are given for materials to be used to follow-up each lesson, local resources to utilize, and methods of on-farm instruction.

Methods of using television in adult farmer instruction vary from school to school. Generally teachers assemble the class 30 minutes prior to a telecast lesson. This period is spent checking the roll, reviewing previous lessons, and raising questions concerning the lesson to follow. Teachers receive an outline of each lesson several days prior to a telecast. After the telecast, the teacher spends from one to one-half hours localizing the information, reviewing the material presented on television, and assisting with individual interpretation.

Evaluation

Teacher and student evaluation has dictated a continued interest in this method of teaching. Administrators indicate support for this method of teaching and say that it has structure, sophistication, and practicality from an economical and administrative point of view. The State Board of Education has indicated its support by continued and increased allocation of funds from year to year to keep the program in operation. Teachers have said in written questionnaires and verbally in meetings that this method of teaching is superior to having a special instructor present at the class.

James Watkins, Teacher of Agriculture at Anderson Creek High School, Bunnlevel, North Carolina, assembles a class of adult farmers to view a televised lesson on Agricultural Machinery Management.

Experimental Plots ---

A Key to Effective Adult Education

ELDON E. WITT, Agricultural Occupations Instructor
Roanoke, Illinois

Have farmers in your area plagued you with questions such as: How much fertilizer should I apply to corn? or What is the economic level of soil fertility? What source of information do I use for answering such questions or should I even attempt to answer these questions? Experimental trials are conducted by universities and commercial concerns; but if the experimentation is not conducted in the local area, just how accurate is the information for local farmers?

The Beginning

Five years ago I conducted an adult farmer course on fertilizers. During the course many questions similar to those indicated above were asked. I concluded that the best answer was to conduct trials on local farms experimenting with varying levels of fertility as an aid in locating the economic level of fertility for corn.

Fifteen farmers agreed to enroll in a five-year course on the economics of corn production. At that time we were only two weeks away from corn planting and plow-down fertilizer had already been applied the previous fall. We organized the class immediately. A president, vice-president, and secretary were elected. A constitution and by-laws were developed, and the group was officially recognized by the school board as an adult farmer course.

Experimental Plots

The fertility program, rate of population, variety, and other pertinent management decisions for each farmer were written on the chalkboard. From this information we selected five relatively homogenous groups to begin our first year of experimentation. We were attempting to eliminate as many extraneous variables as possible and base the experimental plots on variety, population, and fertility.

Class tours to each member's experimental plot were made in July, August, and September. During these tours we made tissue tests, population counts, ear counts, standability checks, and looked for fertilizer deficiency symptoms and insect and disease damage.

The winter meetings were the first real surprise. For years these farmers had been growing continuous corn, heavily fertilized, using the latest approved practices. But for the first time we began to realize that growing corn involved more than planting, cultivating, and harvesting. On our tours we learned that corn plants differ within a field as well as between farms. We learned there are differences in varieties other than differences in yield.

As we analyzed the results of the first year of experimentation, we found that it was necessary that many variables be controlled in our experiments. For example, we decided that the planting of different varieties had to be eliminated for many questions could not be answered because of differences in varieties. As an outgrowth of these discussions, we developed the following requirements for the next year's fertility trials conducted by each farmer.

— All corn must be harvested with a combine, weighed on the same scales, and tested with the same moisture tester.

— All test plots must be soil tested yearly during the week of Labor Day.

— All farmers must plant the same variety on their experimental plot.

— A rain gauge must be placed at each plot.

— All farmers must use the cost analysis sheet developed by the class.

— More experimental plots must be conducted to provide additional information for the fertility plots.

Cooperation from Commercial Companies

Since variety is such an important factor in corn production, we contacted corn companies for assistance in conducting variety trials. Six companies agreed to provide two of their best varieties for test plots each year. Five different farmers test these twelve varieties each year thereby providing sufficient replication throughout the community.

An all-day meeting, open to the public, is held in September each year when visits are made to the variety test plots. A representative of each corn company is present to discuss the merits of each variety. Also a meeting with the cooperating corn companies is held in January when we give our results concerning all varieties.

At this stage we decided that any class member could conduct additional experimental plots involving other phases of corn production. The only requirement was that each farmer must get two other farmers in the class to agree to replicate his test plots. As a result we have additional plots pertaining to herbicides, insecticides, starter vs. no starter fertilizer, liquid vs. dry fertilizer, heavy application of a single nutrient, and many more. All plots are conducted and reported under the same rules governing the original fertility plots.

Eldon E. Witt

Eldon E. Witt is one of two teachers of agricultural occupations at Roanoke-Benson High School. In addition to a high school instructional program with 105 students enrolled in 1967-68, Mr. Witt and his fellow teacher conducted an adult education program involving more than 100 farmers, businessmen, and women. In addition to the Corn Economics Class described in this article, adult courses were held on Tractor Maintenance and Repair, Futures Market, Electrical Controls and Motors, Arc and Oxy-acetylene Welding, and a series of informational meetings on topics of current interest. Mr. Witt currently serves as President of the Illinois Association of Vocational Agriculture Teachers.

Farmers record information about each experimental plot during tours throughout the summer.

Classroom Instruction

Since we became involved with intensified corn production, we began to realize shortcomings in our knowledge of corn production. Each class member purchased a copy of the book *Modern Corn Production.* As instructor, I made weekly assignments and prepared tests on the reading assignments. We studied corn production in earnest! This series of classes was interesting and informative. The farmers were eager to study and the grading of test papers proved to be most competitive. I highly recommend this procedure in adult courses. I have used it in many of my other courses.

We have resource persons in this course, but we find our own studying and testing to be most beneficial. Resource persons from a university or commercial concern are most useful when they know of our work and come to the class session prepared to discuss only one phase of corn production. During these class sessions, the agricultural occupations instructor or the class president serves as moderator and the resource person sits with the class and enters into the discussion.

The Results

We are now in our fifth year of operation. Approximately 150 experimental plots were planted this year by the farmers in the class. This year sixty-four plots will test insecticides for control of rootworm. Some of the insecticides have not been released for commercial use so we are attracting attention from other agencies.

It has been difficult for us to locate the economical bushel of corn. Each class member believes the course has been of benefit to him in this goal, however. It seems to us that we have long enough placed our emphasis on production management and now need to concern ourselves with marketing the product. In reality we have been doubling our mistakes. We have increased production with a larger initial outlay of capital. The fact that our corn yield increased, placing more corn on the market, decreased the advantage of our efficient management and actually gave us a lower net income per acre and a higher cost per bushel.

As Table 1 indicates, in four years we have raised our average yield from 116 to 157 bushels per acre—a 35 per cent increase. Yet during this same period, net profit per acre decreased $7.48 and the cost per bushel of corn increased 19 cents. We realize that some of the additional costs are due to increased use of herbicides and insecticides as well as an increase in land values and taxes. But these are real figures and reflect the present situation. If we can obtain the same net profit with 140 bushels of corn per acre as we can with 150 bushels per acre, we have removed 10 bushels of corn per acre from the market (a 6.6 per cent reduction) thus stimulating price. Unless the need for more corn is prevalent, this should be one of our goals rather than achieving high yields with no regard to production costs. When we speak of the economics of corn production, let's be aware of volume of production and price relationships.

Table 1

Summary of Results of Roanoke-Benson Corn Economics Class

Year	Yield Per Acre (Bushels)	Net Profit Per Acre	Seed, Fertilizer, and Herbicide Cost Per Acre	Cost Per Bushel
1964	111.3	$46.44	$24.49	$0.66
1965	122.6	42.22	28.28	.86
1966	141.7	95.59	31.08	.75
1967	156.8	38.96	33.08	.85

Detailed investigation is made of each farmer's experimental plot.

What Next?

Upon the completion of the fifth year, the farmers are planning to reorganize for another five years. We will probably test three levels of fertility on each farm instead of one. We are convinced that we can produce corn according to the demands of our nation. We want to develop a quality product and provide a market for that product.

We have been involved with testing laboratories in plant analysis. We now want to work with laboratories on analysis of grain. We think that we can produce a product that will demand a premium on the market. Also, we want to begin a new course on soybean production structured in the same manner.

We are convinced of one thing: A study of our records for the past years clearly shows the need for meaningful and accurate analysis of yields, costs, and market price in relation to the desired result—*net profit.*

Each year the results of the experimental trials conducted by farmers enrolled in the Corn Economics Class described in this article are published in booklet form. Copies of the 1967 summary are available at 50 cents each from Eldon E. Witt, Roanoke-Benson High School, Roanoke, Illinois 61561.

Adult Farmer Instruction in Farm Business Planning and Analysis

HOMER E. BROWN, Teacher of Agriculture
Sugarcreek, Ohio
and
JOHN T. STARLING, Teacher Education
The Ohio State University

Paramount in any educational endeavor is the need for the continuous search for new and better methods and procedures. Agriculture, like the rest of the economy, is undergoing rapid and accelerating changes due to technological and scientific developments and improved methods of organization and management.

If we take a look at what happened on Ohio farms between 1955 and 1965, we find that the total value of farm land and buildings increased by more than $23,500 per farm with a total increase of almost two billion dollars for the state. During the same period, the average size of farm increased from 113 acres to 146 acres while the number of farm operators decreased from 177,098 to 120,381. An analysis of the records of 250 dairy farms listed in the 1966 Farm Business Analysis Report shows that the total capital investment for the high 25 per cent of these farms was $123,089, while the median total capital investment was $83,483. Crop farmers in the top 25 per cent reported $28,000 invested in machinery and equipment alone.

Need for Systematic Instruction

These facts show that farming is big business. Large investments coupled with closer margins between cost of production and selling price make it necessary for the farmer to know more about his business if he is to allocate resources in order to get optimum return to the capital and labor invested.

Adult education in agriculture in the past has emphasized approved practices as they apply to a variety of enterprises organized by what is termed the "shotgun" approach. With this plan of instruction, each of a series of ten to twenty meetings deals with a different topic and frequently has only minor significance to the real needs of farm operators. Some farm operators are interested in and attend only one meeting, while others may attend several meetings. Because of the variety of topics and the variation in attendance, it is difficult for the teacher of vocational agriculture to become familiar enough with each farm operation to make worthwhile on-farm instruction. In these cases, on-farm instruction usually deals with approved practices with little or no relationship to the entire farming operation.

Homer S. Brown (right), co-author of this article, reviews the analysis of records with an adult farmer. Interpretation of the analysis data is an important part of the instructional program.

Need for Record Analysis

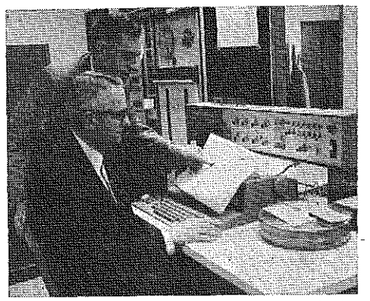
Every teacher of vocational agriculture has, at one time or another, been asked questions similar to these: "Should I buy the 80-acre farm adjoining my farm?" or "Should I trade in my old tractor and get a larger one?" These are, without a doubt, "loaded" questions and cannot be answered until many other questions have been asked and answered. The teacher of vocational agriculture should be thinking, though not asking directly, "Are you a good crop farmer?" This question would be just as "loaded" as the first because the farmer would have to ask himself many other questions before he could provide the answers. Even if he could be reasonably certain that he was a good crop farmer, he would find himself confronted with a mass of other related questions. Obviously, the need for records and an analysis of these records are of major importance. Through an analysis of his farm business, a farmer might find that his machinery investment and costs per crop acre are too high. He might also find that his crop yields, as compared to other farmers in the area, are above average. This is only a limited amount of information but it puts him in a better position to make major decisions.

Recognizing this need to help farmers in the area of farm business management, sixty-five Ohio teachers of vocational agriculture are conducting farm business analysis programs as part of their instructional program for young and adult farmers. The results of these programs have been extremely gratifying as indicated by the program at Garaway High School.

The Program at Garaway High School

A Farm Business Planning and Analysis Program was initiated by the Garaway Vocational Agriculture Department during the 1964-65 school year. This systematic program replaced the "shotgun" type program that had been offered in previous years.

In order to secure enrollment, the Farm Business Planning and Analysis Program was explained to all full-time farmers that had been members of the previous adult program. Enrollment was taken on the first come, first served basis and was limited to eight farms.



John Starling (standing), co-author of this article, and Walter Harter, Agricultural Extension Service, check a computer printout indicating the analysis of a farm operation.

Since the initiation of this program it has grown into a four-year program. The first year the program of instruction is called Farm Records; the second year, Record Summary and Analysis; the third year, Adjustments in the Farm Business; and the fourth year, Technical Agriculture based on the needs as determined by the farm business analysis results. The enrollment has increased each year the program has been in operation. Presently, there are 38 farmers enrolled in four different groups, one group for each year of the program.

Operation of the Program

Classroom instruction consists of two meetings per month for each group with each meeting averaging about three hours in length. The meetings begin in October and continue through April. On-the-farm instruction is provided throughout the year and the hours spent range from twenty to forty hours per farm operation per year.

During the first two years this program was in operation, the teacher of vocational agriculture also had a full unit of high school vocational agriculture. The young and adult farmers in this community responded to the farm business analysis program to the extent that more time was needed to conduct this program. The program also had the full support of the school administration, so an additional teacher was hired making it possible for one teacher to spend full-time on the farm business planning and analysis program.

In financing this program, the local Board of Education pays 50 per cent of the teacher's salary, 25 per cent of the travel, all retirement, and provides classroom and other equipment needed.

Record Analysis

After a farmer has kept complete farm records for a year, a summary of his records is sent to The Ohio State University for computer analysis. As a result the strengths and weaknesses of each farm business can be determined. In order to point out some of the common problem areas, the results of each group's farm business analysis results are averaged and distributed to the enrollees.

Table 1

Selected Items From Farm Business Analyses
(Same 18 Farms 1966 and 1967)

Measures of Performance[a]	1966	1967	Difference
Net farm profit	$ 9,566.07	$ 9,419.62	—$ 146.62
Family labor and Management income	7,097.78	6,890.43	— 207.35
Per cent net margin[b]	24.64	23.06	— 1.58
Per cent operating ratio[c]	48.6	47.99	— .61
Per cent overhead ratio[d]	26.76	29.00	+ 2.24
Gross farm income	30,958.70	31,305.40	+ 346.70
Total farm assets	70,987.25	72,274.77	+ 1,287.52
Gross income per man	15,416.23	18,223.68	+ 2,807.45
Total pounds milk produced per cow	11,879#	11,470#	— 409#
Cost per 100 lbs. milk sold	4.75	5.17	+ .42

[a]The items in the above table represents only 10 selected from over 100 items which a farm operator receives on a printout sheet.
[b]Net Margin = Percentage that family labor and management income is of gross income.
[c]Operating Ratio = Percentage that cash operating expenses are of gross income.
[d]Overhead Ratio = Percentage that overhead expenses are of gross income.

Table 1 shows a comparison of some measures of performance of eighteen farm businesses analyzed for the 1966-67 year. In making an evaluation of a comparison of years of farm business analysis results, one must take into consideration such items as weather conditions, changes in prices received and paid, and labor costs. In Table 1 no attempt was made to equate the measures of performance on the basis of changes in prices paid and received by farmers.

Adjustments in the Instructional Program

As a result of an analysis of his farm business each farm operator can evaluate his operation and the teacher of vocational agriculture can identify specific areas in which instruction is needed for the group and for individual farmers. The analysis of the farm businesses of those enrolled in the program at Garaway High School revealed that special emphasis should be placed on reducing overhead ratio, increasing pounds of milk produced per cow and reducing the cost of 100 pounds of milk sold.

After a farmer has his records analyzed for one or two years he is more acceptable in making adjustments in his business. In order to assist the farmer to eliminate his weaknesses, the Garaway Farm Business Planning and Analysis Program has organized a Dairy Ton Club, a Corn Club for young farmers, and conducted a forage plot demonstration.

The purpose of the Dairy Ton Club is to increase herd average per farm by a ton of milk during the year. Nine farms are enrolled in this program. Specialized instruction (class and on-farm) is given to these members on dairy testing, feeding, breeding, health and management problems. The program was first organized in February, 1968, and already five members have changed or started a testing program and six have improved their feeding programs. Some have already indicated that their production has increased and other improvements will occur as the year progresses. If the Dairy Ton Club is successful, it will be continued and other avenues will be tried to improve farming operations.

Albert C. Barker, Jr.

An Educational Program for Forestry Technicians

ALBERT C. BARKER, JR., Forestry Instructor
Essex Agricultural and Technical Institute
Hawthorne, Massachusetts

The importance of forest water resources in current times has been established and the need for future planning is apparent. Presently, national and state agencies as well as local communities are actively engaged in developing water resource programs. This water resource planning definitely indicates a future demand for technically trained forest watershed technicians.

It is almost an impossibility to expect that college trained foresters can meet this increased demand for watershed personnel. The demand will be too great. A technically trained vocational student can qualify as a forest technician or watershed aide. There will always be jobs for technicians who can work under the general leadership of a professional forester.

Arrangements for Instruction

To become proficient in leadership and equipment control, a student must receive appropriate training during high school. This type of training is difficult to achieve at this level, but is possible if proper administrative arrangements can be made for the instructional program. Depending on grade in school, students at Essex County Agricultural Institute have morning classes devoted entirely to their agricultural specialty course with afternoons for academic subjects.

Longer class periods allow sufficient time for instructors to present theory followed by practical exercises. Our school is fortunate to be located near a municipal watershed and a state forest. We have secured the use of these areas as training grounds for forest watershed practices.

Instructional Program

Silvicultural practices are taught on these watershed areas thereby allowing students to gain experience by actually participating in field projects. The instructional program emphasizes cutting practices that align forest water resource utilization with multiple land use. Students not only learn how to alter different forest stands, they understand the basic principles by which these cuttings are justified.

Equipment used in weekly training classes is purchased through school funds. Some equipment is donated by local dealers and manufacturers. Students are taught how to use a variety of hand and power tools. Emphasis is placed on maintenance and repair of gasoline powered chain saws and brush cutters. In most cases, students learn to use and maintain many of the tools encountered by a forest worker.

Students at Essex Agriculture and Technical Institute learn how to operate, maintain, and repair a variety of gasoline powered chain saws and brush cutters.

After basic tool skills are achieved, the students receive instruction pertaining to insecticides and herbicides. Forest entomology is discussed in class followed by appropriate field trips. Chemical control measures to eliminate undesirable vegetation is also taught. Coordination between pesticides and water utilization is stressed so that students become aware of potential dangers of using these chemicals on watershed areas.

Employment Opportunities

The employment potential for technically trained forest personnel seems unlimited. The graduate of this training usually seeks employment in a field largely controlled by state and federal agencies.

Schools offering vocational agriculture must become aware of the problems in forest watershed management. Schools should evaluate their programs to produce forest technicians who are better prepared to meet the demands of an already expanding field.

J. D. Oliver

FARM MANAGEMENT INSTRUCTION VIA EDUCATIONAL TELEVISION

LLOYD M. JEWELL, JR., Supervision
Virginia Department of Education
and
J. D. OLIVER, Teacher Education
Virginia Polytechnic Institute

Lloyd M. Jewell, Jr.

One of the most pressing needs of young farmer and adult farmer programs is greater emphasis on farm management instruction. With the continuing increase in the cost of production and a narrower margin of net profit, the necessity for making wise decisions constitutes the most critical aspect of the successful operation of a farm.

This problem has been foremost in the planning of the Virginia supervisory and teacher education staffs for a number of years. To update vocational agriculture teachers for providing instruction in this area, a farm management specialist was added to the teacher education staff and an active in-service training program was initiated. Approximately 50 per cent of Virginia teachers have participated in the training program to date. To promote further instruction in farm management for young and adult farmers, the joint supervisory and teacher education staffs endorsed a proposal in March, 1967, to consider farm management instruction via educational television.

Teachers Express Interest

A member of the supervisory staff met with groups of teachers throughout the state to explain the projected program. Later a questionnaire was prepared and sent to all teachers. One hundred and eighty-five of the 340 teachers in Virginia indicated interest and agreed to participate if a course in farm management instruction was offered. Teachers preferred that the course begin the second week in January and that the course consist of ten weekly lessons.

Arrangements for Instruction

A series of ten weekly lessons was presented by educational television beginning in January, 1968. This course was the first of its kind to be offered statewide on educational television in Virginia. The course was sponsored by the Agricultural Education Service of the Virginia State Department of Education in cooperation with the Agricultural Education Department at Virginia Polytechnic Institute. The entire cost of the course was paid by the State Department of Education.

In the local schools the program was conducted under the supervision of teachers of vocational agriculture. The 30-minute telecast lesson, presented at 8:00 p.m. weekly, was supplemented by the local teacher to make it more meaningful to the members enrolled. Classes assembled at 7:30 p.m. During the 30 minutes prior to the telecast, the teacher gave an introduction to the lesson and distributed charts, forms, and other materials needed by the students. Following the telecast, an additional hour was used for reviewing the lesson, explaining practices or procedures not fully understood, applying the practices to the local farm conditions, and making plans to assist class members with individual on-farm instruction.

Every vocational agriculture teacher in Virginia was provided with basic and supplemental teaching materials for each of the ten lessons. These materials included teachers' guides and lesson plans along with samples of charts, graphs, and forms for group or individual use.

Approximately one-third of the counties in Virginia are not in the viewing range of the three operational educational television stations. To make the farm management course available to all young and adult farmer groups in Virginia, four 16 mm sound films were made of each telecast lesson. To date, these films have been used by 44 schools in counties not covered by educational television and other schools have scheduled them for future use.

Content of Instruction

The modern farm is a complex business operation. The farmer combines his resources with large quantities of purchased inputs to produce a product for sale. The most critical aspect of managing such a business is making decisions. The course was designed to provide instruction in economic principles of production and budgets—basic tools useful in making management decisions. Specifically, the course was designed to help participants:

—Recognize the nature and importance of farm management.
—Appreciate the importance of following a logical process in making decisions.
—Understand certain basic economic principles of production and their application in making farm management decisions.
—Develop the ability to use budgeting techniques as aids in making management decisions.

A brief description of each of the ten telelessons follows:

Lesson one: The Nature of Farm Management. What farm management is, why it is a complex task, the importance of management to financial success, some characteristics of good managers, and the decision-making process.

Lesson two: Economics of Fertilizer Use. Making decisions about buying and using fertilizer; using economic principles in making decisions regarding production inputs in general.

Lessons three and four: Estimating Farm Machinery Cost. Estimating the

(Cintinued on page 41)

INDEX TO VOLUME 40

(July 1967 - June 1968)

SUBJECT INDEX

(Continued on next page)

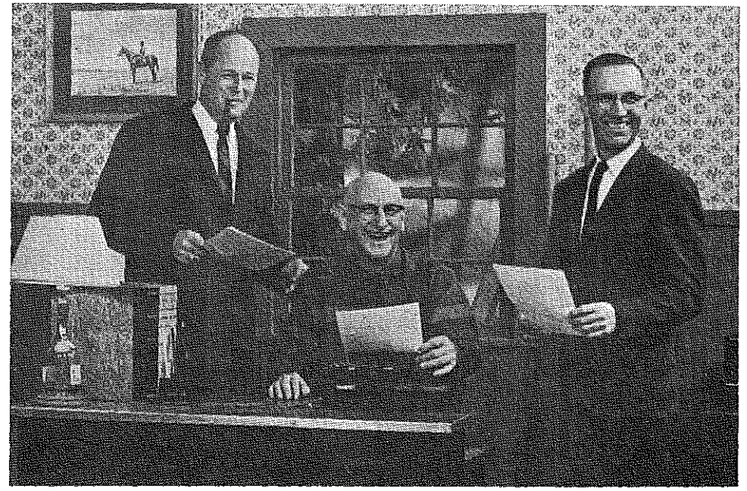
Index to Volume 40 (July 1967 - June 1968)

(Continued from page 39)

AUTHOR INDEX

Farm Management Instruction via Educational Television

(Continued from page 37)



James Gay-Lord (left), Director of Educational Television, Virginia Department of Education; Arch Coleman, Teacher; and Lloyd Jewell, Jr., Supervisor of Agricultural Education, make final preparations for the production of the lessons on farm management via educational television.

cost of owning and operating machines, estimating the cost of livestock and crop machinery on the farm, and determining the cost per acre or per animal unit.

Lesson five: Calculating Farm Labor Cost. Estimating the cost of farm labor and determining labor efficiency.

Lesson six: Partial Budgeting. A procedure for estimating the costs and returns that would change if an adjustment is made in the use of productive resources.

Lesson seven: Crop Enterprise Budgeting. Estimating the cost of producing crops (using information on fertilizer, machinery, and labor from previous lessons).

Lesson eight: Computing Rations for Livestock. Computing balanced rations; applying economic principles in selecting the most economical rations.

Lesson nine: Livestock Enterprise Budgeting. Estimating the cost of producing livestock enterprises (using information on machinery, labor, and feed from previous lessons).

Lesson ten: Summary and Next Steps. Summary of previous lessons and discussion of topics for a future series of lessons.

Taking an overall look at the series, procedures were covered for estimating the annual cost of machinery, fertilizer, labor and feed—four of the most important inputs used on a farm. Illustrations were included to show how economic principles and budgeting techniques may be used in making management decisions regarding the use of these inputs in producing crop and livestock enterprises. The teachers supplemented these illustrations with appropriate local examples.

Reaction of Teachers

Teachers in all participating schools were asked to evaluate each of the ten lessons. While teachers made valuable suggestions for the improvement of future courses, they expressed an overwhelming desire to continue a series of educational television lessons as a part of the instructional program for young farmer and adult farmer groups. One teacher of vocational agriculture said, "The ten lessons in farm management were a tremendous shot in the arm for our young farmer program. My class would definitely like to see the program continued next year." Another teacher commented, "I think this is the greatest single step that has ever been taken to assist teachers with their adult instructional program."

ADULT EDUCATION — DOES IT PAY?

EDGAR A. PERSONS, Teacher Education
University of Minnesota

The idea of a business management emphasis for adult instruction in agriculture in Minnesota was inspired by the success of the Institutional-On-Farm training program following World War II. Adult education based upon farm business records and a total farm management approach is now the basic course prescribed to fulfill the requirements for adult education under the Minnesota State Plan for Vocational Agricultural Education.

The Minnesota Program

During the 1967-68 school year, seventy-six vocational agriculture departments employed more than one instructor. In almost all cases, at least one of the additional men in each department was responsible for conducting organized classes in farm business management education. Enrollment in these courses exceeded 3,000 farm families with over 1,500 submitting farm business accounts for analysis. Rapid growth has just begun. If adequately trained teachers can be obtained there will be over ninety vocational agriculture departments with instructors assigned to adult farm business management education during the 1968-69 school year.

The content of the instructional programs varies from school to school although the general theme for instruction for the first three or four years is fairly uniform. The first year could be titled "Keeping Farm Records and Accounts," the second, "Analyzing the Farm Business," and the third, "Organizing the Farm Business to Meet Family Goals." Most programs continue with advanced groups in interpreting the analysis of the farm business and planning for further evaluation and changes in farm resources reorganization. Enrollment in programs taught by full-time instructors ranges from about twenty-five to sixty-five farm operators.

The farm business management education program is organized to satisfy the following criteria:

- There should be specific enrollees in each course.
- Each course should consist of specific units of instruction.
- Courses should be taught in a regular and definite sequence.
- There should be continuity between courses with progress toward farm business reorganization, greater operating efficiency, or some other family goal.
- Individual on-farm instruction should be a planned part of the instructional program.

Expected Returns to Investment in Education

Agricultural education, like all of vocational education, must deploy limited resources in a variety of instructional schemes. The decision to utilize funds for adult education should be based in part on the expected return to investment that such programs will provide in comparison to alternative uses of the capital resource. The measurement of benefits, or more specifically the ratio of benefits to costs, has not been widely used in educational decision making. Many educators have looked with disfavor at the concept of an economic analysis of educational programs since many of the products of education such as values, attitudes, work habits, and inter-personal skills cannot be objectively measured or assigned economic value.

Cvancara's research suggested that the economic return to a specific instructional program such as farm business management education could be effectively measured by the increases in income that resulted from changes in behavior of the farmers enrolled.[1] To further test this hypothesis researchers at the University of Minnesota studied the long term effect of educational investment in the form of farm business management education on the economic return to participants.[2] No attempt was made to measure or value the social benefits which may have been a product of the educational program.

Measuring Economic Benefits

Measurement of economic benefits from education was accomplished by examining 3,518 farm records of farmers who had been enrolled in farm business management education from 1959 to 1965. Measures of farm income as well as seventy-one other measures of business attributes, personal, biographical, and educational characteristics were examined to determine their interrelationships. Income measures were reduced to standard indices to eliminate the growth effects that might naturally occur as a result of price changes, economic growth of the agricultural sector, general inflation, and farm business firm growth that occurred irrespective of enrollment in an education program. Income measures examined were labor earnings, return to capital, and family labor and total farm sales.

A curvilinear regression technique was employed to prescribe the curve that best described the relationship of each of the indexed measures of earnings to inputs of farm business management instruction. Marginal returns to educational investment were determined by reference to the curves.

Income rose sharply during the first three years of instruction, declined during the fourth through sixth years and began a sharp rise in the seventh year which continued through the tenth and last year studied. The rapid recovery of income during the later instructional years is evidence that those who advocate a program limited to three years will fail to capitalize on improvements in management that occur with persistant enrollment.

Benefit-Cost Analysis

A benefit-cost technique was used to relate the present value of future benefits to the present value of future costs.[3] The cost calculations of the benefit-cost analysis allow for opportunity costs for both work-time and leisure-time utilized in the educational process. The opportunity costs of work and leisure time foregone are often the major costs to the participant.

The benefit-cost ratio for farm operators enrolled in the Minnesota vocational agriculture farm business management education program from 1959-1965, based upon all farm operators enrolled in well organized programs, was about 4.2 to 1. *For each dollar invested by the farm operator in the business management program either in actual cash expense or in hours of classroom, group, and individual instruction, the operator received $4.20 in increased return to labor and management.*

Economic Benefits to the Community

In examining the returns to investments in farm business management education, communities would find it more appropriate to measure the impact on business activity by examining growth in total farm business volume rather than net return to labor and management (labor earnings) for individuals. Total farm sales provide one common measure of business growth. A farm business management education program which enrolled about fifty farm families in four separate classes could expect to show annual marginal increases in sales of about $173,000 over those farmers of similar characteristics who are not enrolled.

In addition to the opportunity and direct costs borne by the participants, the community must make contributions for program operation and capital outlay. In Minnesota, the annual operating costs for maintaining an adult instructor and providing auxiliary services and supplies necessary for performance of his tasks are estimated to be $11,500. In addition, the school would need to provide about $700 to amortize the cost of capital outlay for office space, conference room, and office equipment.

Taking into account the marginal community benefits and accounting for all opportunity and direct costs for both individual participants and the school, the benefit-cost ratio for farm business management education is about 9 to 1. *For every dollar expended in conducting a farm business management education program, the community can expect to generate nine dollars in increased business activity.*

Summary

While the reported benefit-cost ratios for individual and community investments in agricultural education for adults are very high, the implications of the research are of even greater interest. The performance curves which describe the relationship of education to farm income may also describe what educators have commonly called the learning curve. Response in marginal earnings may be another way of assessing the behavorial changes that occur as manifestations of learning. If this is the case, then the learning curve should be manageable. Agricultural educators may need to examine and test alternative operational plans for farm business management education that will accelerate the rate of learning and reduce the time span over which learning is maximized.

Likewise, instruction in management for farm entrepreneurs may have implications for other business firms. Proof of the economic efficiency of management education for farmers should prompt examination of similar programs for operators of other kinds of private and public business enterprise.

One fact is clear: The farm business management education program as taught in Minnesota public schools offers a high return on investment to both individuals who enroll and the sponsoring community. Rural communities who are searching for ways to build community affluence, prevent erosion of tax base, and improve the level of living of farm families, should examine the feasibility of expanding vocational agriculture in the local school to include intensive adult instruction in farm business management education.

[1]Cvancara, Joseph G. "Input-Output Relationships Among Selected Intellectual Investments in Agriculture." Unpublished Ph. D. dissertation, University of Minnesota, 1964.

[2]Persons, Edgar A. "An Economic Study of the Investment Effects of Education in Agriculture." USOE project 427-65, University of Minnesota, January 1968.

[3]Davie, Bruce F. "Using Benefit-Cost Analysis in Planning and Evaluating Vocational Education." Paper prepared for David S. Bushnell. Bureau of Research, U.S. Office of Education, November 1965.

BOOK REVIEW

AGRICULTURAL FINANCE by A. G. Nelson and W. G. Murray, Ames, Iowa: Iowa State University Press, 1967, 561 pp. $8.50.

Successful farm financial management requires knowing how to use capital successfully, including credit. This is especially true with the continuing growth of farms and the greater use of purchased inputs combining to multiply requirements for capital.

Agricultural Finance approaches this problem by focusing attention on the 3-R's of credit: (1) Returns produced —will the added returns derived from use of credit justify its use? i.e. will it pay to use credit and, if so, how much? (2) Repayment capacity—will the borrower have sufficient income to repay the loan? and (3) Risk-bearing ability—does the borrower have sufficient risk-bearing ability to carry the added risk involved in using credit?

The latter section of the book is devoted to analysis of lending institutions and a portrayal of their loan policies and procedures. In a concluding summary chapter, lenders are compared and their performance is analyzed in terms of the 3-R's of credit. This book could well serve as a text for universities and colleges and as a reference and guide source by knowledgeable economists, farmers and bankers.

Mr. Nelson is an agricultural economist with the USDA Economic Research Service and Mr. Murray is professor of economics at Iowa State University.

Guy E. Timmons, Professor,
Michigan State University

James Albracht

Multiplying the Teacher's Efforts in Adult Education

JAMES ALBRACHT, Teacher Education
Kansas State University

In a comprehensive study of adult education in the United States in 1966, the following conclusions were made: upper and upper middle classes participate in adult education programs; adult education consists mostly of vocational education; faculty members generally give adult education low priority; adult education programs are not geared to meet the problems of today; and the climate has never been better for a creative explosion of adult education.

In agricultural education the traditional adult class member is the person who has a larger than average farm operation in both capital investment and acreage. He has a higher than average educational attainment, and he has a thirst for additional information. The average class member is usually interested in the social and leadership development which can be attained by membership in a young farmer or adult farmer class. Both young farmer and adult farmer classes will be referred to as adult classes, because age alone is not an adequate way to differentiate between the two types of classes.

Additional Teachers

The findings that "faculty generally give adult education low priority," "adult education programs are not geared to meet the problems of today," and "the climate has never been better for a creative explosion of adult education" imply that more needs to be done to improve present programs of adult education. In some cases it may be possible to hire another teacher to conduct the program of adult education. This would be desirable, especially if the present teacher of vocational agriculture has a sufficient number of vocational agriculture students to be considered full-time. A great deal of growth in adult education could be obtained through employment of additional teachers for adult programs.

If an additional teacher is not possible, then the present teacher might have to take a look at the priority which he has given to adult education. He may have to evaluate the economic impact which the adult program is making in the community. Perhaps a much greater impact could be accomplished in the financial realm by working with the farmers in the community. Perhaps the teacher has failed to see the carry-over benefits an adult program could provide for his regular vocational agriculture program, or he may not consider that the involvement with an adult program of vocational agriculture is a great in-service educational device for the teacher. Other benefits which the teacher may have overlooked are that his regular lessons could be enriched with the experiences obtained and that his judgmental decisions could be tempered and enhanced by associations with the leading producers in his community.

Using Additional Resources

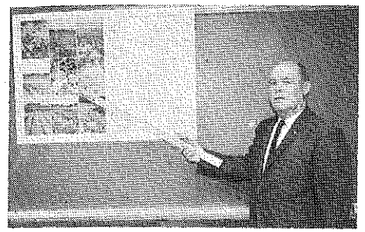
When additional adult education services are offered by the vocational agriculture instructor, time must be found for these services. This can be done by either discontinuing some of the present services which are being offered or by becoming more efficient in the performance of the services which are to be continued. Both alternatives should be considered, but the alternative which offers the most promise is that of becoming more efficient. Perhaps a goal would be to have the teacher's present services multiplied by other persons and by resources which are available. Some of the most promising ways in which the teacher's efforts could be multiplied are as follows.

Class members and class officers. Members and class officers can help the vocational agriculture teacher in both the administrative and instructional phases of the adult class operation. Members and class officers can help secure enrollment, plan social and recreational functions, secure resource personnel, serve on special committees, help identify the short and long range objectives of the program, help select the topics to be discussed, help plan and conduct field trips, and serve on class panels.

Young farmer associations. Associations are helpful in the development of the social and leadership skills of class members. They can also be helpful in furthering technical agricultural skills by providing a list of available resource persons to chapters and planning state tours and conventions. Local young farmer chapter members develop pride in their membership and spirit in their community. Wives' organizations do much to keep up the interest of the husbands who belong to young farmer classes.

Resource persons. Specialists usually make good speakers at adult class meetings if adequate preparations have been made. Specialists in livestock, crops, economics, engineering, and other areas are often chosen.

Neighboring vocational agriculture teachers. Neighboring teachers can do much to help generate enthusiasm for adult classes in their respective communities. Perhaps a few joint meetings between classes could be held, especially if outstanding resource persons can be secured by holding joint class meetings. Another possibility is the sharing between classes of the specialities or experiences which each instructor has available.



Specialists are good speakers at adult class meetings if adequate preparations have been made. Harry Kivett, Rawlins County (Kansas) Agent discusses fertilizer deficiency symptoms with a young farmer class. (Photo by Bill Wood, Atwood, Kansas)

Field trips. Occasionally a field trip can provide instruction which could not be obtained in any other way. Good examples are regional machinery shows and field trips to observe outstanding farming operations in the particular area or region. Tours to the farms of class members are usually successful. Class meetings can be held in conjunction with the field trips to the homes of class members.

Panels. Panels are a successful means of teaching. The teacher will often be the panel moderator. Leading livestock and crop producers make good panel members along with class members who have special competencies in the areas discussed. Certain class discussions seem to be handled better by a panel than by any other method of instruction.

Farm organizations. Farm organizations have traditionally promoted adult education for their members. Officers of farm organizations are pleased to speak to adult classes on topics of special interest. Topics involving legislation are often discussed by members of farm organizations. Such topics as water pollution, corporate farming, and other topics of a policy nature can be handled quite effectively by farm organization speakers.

The teacher will need to be a good administrator or he might be busier coordinating all of the resources which are available to him than he was before. However, in order to receive the cooperation from others, the teacher will need to cooperate with them. The amount of cooperation which is needed depends upon the individuals involved in the particular activity. The teacher will need to be the analyst, the catalyst, and the psychologist as he decides if he should use any or all of the resources which are commonly available to him. The individual teacher decides which of the resources multiply his efforts and thereby increases his efficiency, and which of the resources do not.

The Teacher's Task

Regardless of the amount of resources which are available to the teacher, he must continue to plan, make his farm visitations, analyze his program, and decide which of the resources are the most valuable to him. Perhaps "the climate has never been better for a creative explosion for adult education" is an accurate prophecy.

NATIONAL FFA ARCHIVES

The following materials are needed for the National FFA Archives.

Agricultural Education Magazine

To complete the files from Volume 1 (1929) through 1937, the following issues of *The Agricultural Education Magazine* are needed: January 1932; May and July 1934; May, July, September, and October 1935. All issues beginning with January 1938 are needed.

American Farm Youth Magazine

The American Farm Youth Magazine preceded the *National Future Farmer*. It was not an official FFA publication but had wide circulation among FFA members prior to 1952. All issues of *The American Farm Youth Magazine* are sought.

Future Farmers of America Manual

The FFA Manual was first printed in 1930 by *Farm Journal*. The Archives has one copy of the first edition which is badly worn. Another copy of the first edition as well as other early editions are needed.

National Congress of Vocational Agricultural Students

The national judging contests for vocational agriculture students were first held in Kansas City in 1926. For ten years the judging contests were referred to in annual pamphlets as "National Congress of Vocational Agriculture Students." The Archives has a copy of "Announcement of the Second Annual National Congress of Vocational Agricultural Students" which was for the national contest and meeting events held in Kansas City in November, 1927. The Archives also has a copy of the fifth annual announcement for 1930. Annual announcements for the National Congress are needed for the following years: 1926, 1928, 1929, 1931, 1932, 1933, 1934, and 1935.

Address of National Archives

Teachers of vocational agriculture, teacher educators, and state supervisors—especially those with many years of service and those retired—are asked for assistance in obtaining the needed items. Send materials and suggestions to:

E. J. Johnson
FFA Consultant and Archives Chairman
Future Farmers Supply Service
Alexandria, Virginia 22306

Advantages of a University Operated Technical School of Agriculture

JAMES T. HORNER and STANLEY A. MATZKE, JR.
University of Nebraska

Throughout the United States an important question is being asked: "Who should be responsible for vocational-technical programs in agriculture?" The answer to date has been "everybody." Area vocational-technical schools, junior colleges, community colleges, four year colleges, and universities are involved in technical agricultural education.

In this article we support one institution which should be considered —the Land-Grant University. Land-Grant Universities have been involved in providing agricultural education since the Morrill Act in 1862. Hence, these institutions have the greatest experience and wealth of knowledge in the field of agriculture.

Questions to be Considered

When studying the question concerning what type of institution is best suited for offering programs of technical education in agriculture, some basic problems must be considered.

- At what level should the content be taught? Should transfer credit be a goal? What is to be the proportion of practical (manipulative) training and theoretical instruction?
- Who will determine the curriculum?
- What criteria will be used in selection of instructors?
- What type, amount, and method of related subjects (general education) will be taught?
- How can the program offered be made attractive to prospective students?

The University of Nebraska School of Technical Agriculture

In 1965 a resolution passed by the Nebraska State Legislature stated that "The Board of Regents of the University of Nebraska be instructed to set up courses of study related to agriculture on a post-high vocational-technical school level but not to be considered as college grade at Curtis, Nebraska." This resolution gave direction on the questions of what level and what content were to be taught.

The level of training and whether college credit will be given have become difficult problems in vocational-technical education. The above resolution gave direction on the questions of what level and what content were to be taught. It was the consensus of both the legislature and the College of Agriculture that each institution (the College of Agriculture and the University of Nebraska School of Technical Agriculture) have separate and distinct goals and that the two institutions would not compete nor would they duplicate facilities and instruction. Having agreed that the program offered would not be degree oriented, the other questions were fairly easy to answer.

Instructional Programs

When it is clearly determined that you are preparing for agricultural industry the basic criteria for selection of instructors becomes evident. The school is not compelled to place priority on degrees above successful, practical experience or published articles above trade knowledge. The instructor can be chosen on the basis of the subject matter that must be taught and how well the prospective instructor can relate to students.

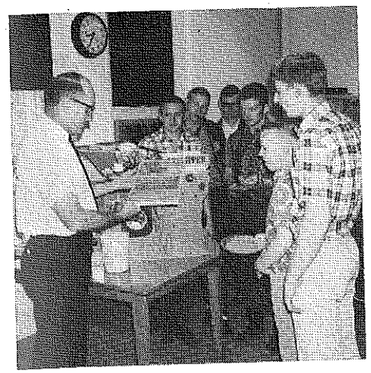
The related subjects such as mathematics and physics can be taught in a practical way that is meaningful to the student. The instructor's objective is to teach the subject in such a way that the student can use it directly in his chosen occupation. It is not a disgrace to the student to be studying basic mathematics related to Agricultural Machinery Mechanics Technology while one of his fellow students in Agricultural Conservation and Civil Engineering Technology is studying calculus. The student knows that he has come to school to pursue a specific program and that he is involved in a course of study which has been designed with the assistance of advisory committees from agricultural industry.

In October, 1968, the University of Nebraska School of Technical Agriculture will begin a Veterinary Technology program which is the consummation of three years of planning with the Nebraska Veterinary Medical Association. That association through advisory committees, directed us to teach certain subjects. They have indicated the approximate amount of hours they feel should be taught in the various subjects. The Veterinary Science Department of the College of Agriculture gave full support and cooperation. However, it did not infringe upon our domain. All other programs now operating at Curtis were instigated in a similar manner.

Stanley A. Matzke, Jr.

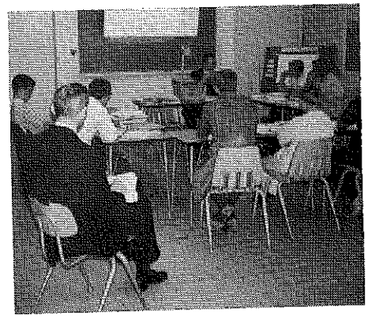
James T. Horner is Chairman and Professor, Department of Agricultural Education, University of Nebraska, Lincoln. Stanley A. Matzke, Jr. is Superintendent of the University of Nebraska School of Technical Agriculture located at Curtis, Nebraska.

James T. Horner



(Left)
A technical agriculture instructor discusses sieve size and function of the seed cleaner with Agricultural Business Students.

(Below)
Roy Dillon, Associate Professor of Agricultural Education at the University of Nebraska, observes the classroom performance of a technical agriculture instructor who is enrolled in the in-service teacher education program provided for the staff of the School of Technical Agriculture.



In-Service Education

The present staff at the University of Nebraska School of Technical Agriculture numbers sixteen. Two have master's degrees, eight have bachelor's degrees, and six hold diplomas from two-year vocational-technical schools. This range in educational background creates a need for a program of in-service education. Here again the parent college has been of real value. The Department of Agricultural Education has set up an off-campus course for the staff at Curtis. We envision that this type of support will continue and that a variety of courses will be offered over the coming years. That department also provides guidance and coordination in research and overall program development.

Some Advantages

Without question some schools that attempt to provide both degree and vocational-technical programs on the same campus have discredited the student who is not taking the "academic" or transfer courses. Some recent research indicates that large numbers of students are not going on to school or are attending private schools mainly because great emphasis is placed on academic subjects. Our approach to teaching related subjects (general education) is a big selling point to many students. It is evident that many students drop out of college not because they lack intelligence but because they do not get what they wanted. The 20 per cent of our students at the Technical School of Agriculture who are college drop outs possess an average IQ of 118.

The availability of specialists from the University of Nebraska College of Agriculture is most advantageous for they understand the objective of the vocational-technical school and are most willing to contribute of their great wealth of knowledge and experiences. The instructor at the Technical School of Agriculture gains status because he is associated with a Land-Grant University. The instructor knows college transfer is not the school's aim, so does not have to "make the course tough" so the graduates will transfer successfully.

We also enjoy the benefits of the accounting system of the University, the legislative support of the University in gaining a budget, the savings of the University's central purchasing, and the counsel of the Chancellor and all other key staff members at the University of Nebraska.

The certificate the graduate receives is signed by the Chancellor, the Dean, and the President of the Board of Regents.

In the three years we have been part of the College of Agriculture of the University of Nebraska, it has become apparent that it is a mature institution willing to give the guidance, assistance, status and support while allowing the flexibility needed to achieve the goals of preparing young people for agricultural occupations. It still holds firmly to the Land-Grant philosophy of extending agricultural education to meet the needs of the people of the State.

BOOK REVIEW

FARM BUSINESS MANAGEMENT, AN INSTRUCTORS'S GUIDE by Milo J. Peterson and Clarence J. Hemming. Washington, D.C.: U.S. Department of Health, Education, and Welfare (Available from Agricultural Education, U.S. Office of Education), 1967. 151 pp.

This instructor's guide encompasses a three-year instructional program for farm business management. Each section contains course outlines for each of the three years. The course outline has thirteen to fifteen instructional units for each year's activities. The units contain suggested student work sheets which could be adapted to any state's program of farm business planning.

The guide is designed to have the enrollees assemble the necessary facts about the farm business from which problems may be identified. While the guide provides the opportunity to incorporate economic principles, it identifies and discusses only two concepts: diminishing returns and average and marginal returns. The three units, each representing a year's instruction, were developed as a result of experience in farm business management education in Minnesota.

This publication is directed to teachers concerned with farm business management. The emphasis is aimed toward young and adult classes but application could be made to high school farm management instruction. This publication should reduce the teacher time in planning instructional units for farm business management classes. It also provides many suggestions for work sheets which can be used by students.

Leon W. Boucher
The Ohio State University

Farmers Need Instruction about Nuclear Radiation

CLETUS J. FONTAINE
Wisconsin Board of Vocational, Technical and Adult Education
and
DAN W. SCHEID
Madison (Wisconsin) Area Technical College


Dan W. Scheid

Cletus J. Fontaine is Supervisor of Civil Defense Education Programs, Wisconsin Board of Vocational, Technical and Adult Education. Dan W. Scheid is Chairman of the Agricultural Division, Madison Area Technical College, Madison, Wisconsin.


Cletus J. Fontaine

What would a nuclear disaster mean to farmers in your community? Radiation from fallout produced by a nuclear attack could be expected to affect 75 per cent of the land area and 85 per cent of the unprotected population. If proper protection measures against radiation from fallout are not taken, the farmer and his family will be seriously affected.

Although livestock can absorb larger doses of radiation than people, they will be affected. Crops may be contaminated by fallout or by the uptake of radioactive isotopes by plants from contaminated soils. The population of this nation would depend upon the farmers in your community for food and fiber following a nuclear attack. Would they be able to respond?

The answer is "yes," if his life can be spared, if he can protect his livestock from contamination and exposure, and if he knows how to farm contaminated soils.

Safety Education

As a vocational agriculture teacher, you are responsible for a variety of educational activities among rural youth and adults in your area or school district. You are expected to provide them with a curriculum which fulfills their needs.

The need for safety education in your curriculum is generally recognized. No doubt you are providing it with a unit planned to develop attitudes which you hope will reduce time lost due to accidents and injuries. Safe handling of farm tractors, machinery, and livestock is stressed. Statistics are used to impress students with costs from loss of life and limb, doctor and hospital bills, and lost time and income. Emergency preparedness measures designed to prevent injury and death from unexpected tornadoes, lightning storms, hurricanes, and the like, are included in this unit.

Instruction on Nuclear Radiation

Have you considered enriching farm safety education with information on protection from nuclear radiation and how it relates to survival on the farm and other rural areas? The problems of survival on the farm are more complex in many ways than those faced by urban residents. The urban dweller is able to rely heavily on local governmental resources. Farmers and their families are, necessarily, responsible for a much larger part of their own protection and for that of their crops and livestock.

As a vocational agriculture instructor you may feel inadequately prepared to teach this unit. Terms such as radioactivity, fallout, gamma rays, decay, Strontium 90, shelter, roentgen, and dose, may be unfamiliar.

These terms were new to the authors, too, until they completed a workshop in Personal and Family Survival offered by the Wisconsin Board of Vocational, Technical and Adult Education. After completing this workshop, both instructed adult farmers and wives and high school agriculture students in a unit oriented to the farm and rural people.

Personal and family survival is a family affair. Safe use of foodstuffs temporarily contaminated is possible if the housewife knows how to decontaminate them. Also, the farm home may well be used as a shelter so the family needs to know how to use the home for this purpose.

Instructional Materials Available

You can obtain details and materials on Personal and Family Survival from Civil Defense Adult Education coordinators who are part of the Department of Education in most states.

Planning is Essential for

Successful Young Farmer Programs

O. B. ROLLER
Teacher of Vocational Agriculture
Fort Defiance, Virginia

During the time vocational agriculture has been taught in our public schools dramatic changes have taken place in agriculture. Farming has become highly mechanized and scientific. More and more agriculturally related work is being done by services and agencies off the farm. There has been a rapid increase in the services dealing with processing, packaging, distributing, and marketing of food and fiber produced on farms. The local program of agricultural education, both for high school students and adults, should reflect these changes. We have acknowledged the changes but have been hesitant in reflecting them in our instructional programs.

Importance of Planning

During the nineteen years I have taught vocational agriculture I have learned that proper planning is perhaps the basic requirement of a functional instructional program. Only thorough planning will give the desired results. If I were to single out the most glaring weakness of classroom teachers, including those of us in agricultural education, it would be inadequate planning and poor preparation. No one knows better than students, whether they be children or adults, how well the teacher who stands before them has planned for the teaching he does.

Planning for Young Farmer Programs

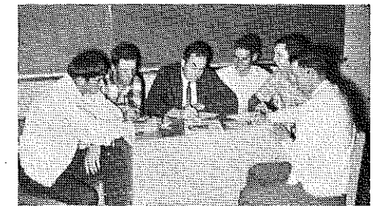
One of the greatest challenges I have encountered in conducting young farmer programs has been that of stimulating interest. In most communities there is always a small group of farmers who were anxious to attend classes. Although this may be slowly improving, the statistics reveal that only a small percentage of the adults who could profit from organized instruction are being reached. Thus, one of the greatest challenges in planning and conducting the instructional program is to discover and use ways which will stimulate more young farmers to participate.

What results do we expect from our instructional program? We must know what we are striving to achieve —our goals. Planning and conducting the program will be of little value unless it results in the young farmers making intelligent decisions and applying approved practices in their farming operations. Our efforts will be of little significance if we do not assist young farmers in solving problems effectively as well as economically.

Because of unlimited demands for the time and talents of teachers of agriculture, it is essential that we plan well those things we should be doing in agricultural education. Too many classes are taught with little thought about the topic to be discussed and even less consideration is given to the home farm conditions of the student. Inadequate planning is one of the reasons why we fail to keep enrollment, especially young farmers and adults.

Suggested Guidelines

- The instruction should be planned by the teacher and the young farmers with the teacher accepting major responsibility and providing leadership. The overall objective should be discovering and solving major problems of each young farmer enrolled; instruction should be systematic and conducted throughout the year; on-farm instruction should be provided; and the instruction should be practical and interesting.


Effective young farmer programs are a result of thorough and careful planning. O. B. Roller, the author of this article, works with a committee of young farmers in planning the instructional program.

- The teacher should brief members of his advisory council on plans for young farmer instruction then seek and utilize their advice and suggestions.
- The program should be evaluated as it is conducted. The evaluation should be initiated by the local teacher and should involve all individuals who participated in planning the program as well as others who have an active interest. Some criteria might be: Is the program of instruction solving the problems and meeting the needs of the young farmers? Are the young farmers growing and becoming financially and emotionally stable in the industry of agriculture? If results are not as outstanding as expected, the program should be redirected with renewed interest and enthusiasm.

Plan Before Work

Remember that effective programs are a result of thorough and careful planning. This takes time, thought, and dedication on the part of the teacher. But we dare not do less or we shall fail in the much needed program of young farmer education. In the words of the FFA ritual, "work hard, but plan before you work."

A New Program in Vocational Agriculture

ALBERT LEE
Teacher of Agriculture
Williamsburg, Kentucky


Albert Lee

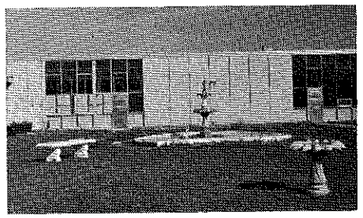
For many years teachers of vocational agriculture have advocated revision of programs in order to meet the changing needs of today's students. The mode of farming has changed through the years and students needs have become more varied and complicated. Therefore, programs of vocational agriculture must change.

A New Program

Our school, Whitley County High School in Williamsburg, Kentucky, has a natural advantage to move in the direction of providing instruction in horticulture. We have 1,100 students in a consolidated system. The school grounds consist of 160 acres of level to rolling land. We have a two-teacher department of vocational agriculture with 102 boys enrolled. My co-teacher provides instruction in production agriculture (farming). I have started a new program in horticulture. The program was developed in consultation with agricultural education specialists in the State Department of Vocational Education and the University of Kentucky.

The course of study is designed to help students develop basic understanding and skills which will lead to further training in ornamental horticulture or to employment as operators of greenhouses, nursery aides, lawn and garden maintenance workers, or landscape aids. The primary units of instruction include:

- Greenhouse management
- Bedding plant production
- Potting and transplanting
- Soil sterilization
- Plant growing media
- Insect control
- Ventilating and heating greenhouses
- Plant identification
- Landscape design
- Turf maintenance
- Small engines


We designed and constructed a fish pond, complete with statue and fountain, that is 56 feet in circumference and holds over 3,000 gallons of water. The setting is in the center of a rose garden we planted last spring.

Laboratory Facilities

The program of instruction necessitated the construction of a greenhouse indicated in the picture. The first year we produced over 500 geranium cuttings, 150 dozen petunias, 90 dozen marigolds, 90 dozen scarlet sage, and 70 dozen ageratums as well as other bedding plants. The market value of the flowers raised was over $1,200.00. We sold enough flowers to make the program self-supporting as far as additional costs. We also set flowers on the school ground that were valued at approximately $400.00. In addition, we designed and constructed a fish pond for the school grounds (see picture).

The projects carried out on the school grounds have greatly enhanced the opportunity for students to practice what is taught. Students also receive much more supervision than could possibly be given with a home-farm program.

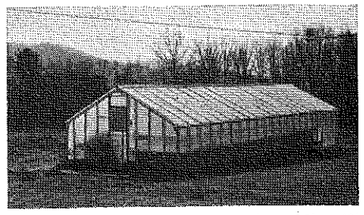
Program of Instruction

Many exercises taught in the raising of flowers and bedding plants can be used in raising field crops. There are many related lessons in soils, insecticides, fertilizers, light, water and temperature requirements, length of growing seasons, and related topics. The program provides an excellent opportunity to stress the basic principles of plant science. Our greenhouse serves our program like a laboratory does for a good science teacher.

We offer a complete course in small engines for much of the equipment used in horticulture has to be repaired from time to time. We feel this saves both time and money for the students. Students also have the opportunity to learn the practical agricultural mechanics related to ornamental horticulture.

An Effective Program

We think this adaptation of our program is very effective. We still have a good production agriculture program. But we now are helping many boys who were unable to profit from a more narrow program of former years. We are doing a better job of teaching principles of plant science. We also feel that many of the boys will be able to enter successfully careers in ornamental horticulture. The motivation and public relations value of the program is great. In short, it has been and continues to be a most satisfying experience.


As a class project we constructed an 18' x 42' fiberglass greenhouse on the school grounds. By doing the work with students, we were able to build the greenhouse for $1,143.00.

BOOK REVIEW

COOPERATIVES IN AGRIBUSINESS. Educational Circular 23, Farmers Cooperative Service, U.S. Department of Agriculture. Washington, D.C.: Government Printing Office, 1968. 60 pp. 40 cents.

This publication explains the cooperative procedure of operating a business. It is written in general terms but sufficient details are included to give the reader knowledge of cooperatives in agribusiness.

The cooperative business procedure is explained in terms including importance, organization, membership, financing, management, and distribution of earning. Cooperatives are also compared to other forms of doing business. Different types of cooperatives in agribusiness are explained and specific examples are enumerated. Careers in agribusiness are emphasized and cooperatives in agriculture are projected for the future.

The publication was coordinated by Irwin W. Rust, Director, Training Division, Farmers Cooperative Service. Staff members of different services prepared sections covering subjects in their respective fields. The Office of General Counsel, U.S. Department of Agriculture, reviewed portions of the publication relating to phases of cooperative structure and operations. Several vocational agriculture teachers were also consulted on requirements for teaching materials.

The publication is well adapted as a reference for high school classes in agricultural occupations. Its best use would be as an orientation to cooperatives in agribusiness. Additional references would be needed for a comprehensive study in the field.

John D. Todd
University of Tennessee

News of the Profession


Charles C. Drawbaugh

Charles C. Drawbaugh, Associate Professor of Education, Rutgers—The State University, New Jersey, has been appointed Special Editor for *The Agricultural Education Magazine* for Region II (Delaware, New Jersey, New York, and Pennsylvania).

Dr. Drawbaugh taught vocational agriculture for fourteen years in Hegins and Dover, Pennsylvania. He holds B.S., M.S., and D. Ed. degrees in agricultural education from The Pennsylvania State University. He has been a member of the faculty of the Graduate School of Education at Rutgers since 1964.

Dr. Drawbaugh has had articles published in *The Agricultural Education Magazine, American Vocational Journal,* and the *Pennsylvania Agricultural Education Magazine.* Dr. Drawbaugh is a researcher and serves as consultant to several research projects. He is currently secretary of the American Association of Teacher Educators in Agriculture.


Elvin Walker

Elvin Walker, immediate past-president of the National Vocational Agricultural Teacher's Association, has been appointed Assistant State Supervisor of Agricultural Education, Georgia Department of Education. Mr. Walker holds B.S. and M.S. degrees in agricultural education from the University of Georgia.

Mr. Walker has been a teacher of agriculture in Georgia for twenty-four years, the last twenty-two years at Norman Park High School, Norman Park, Georgia. At Norman Park High he developed a program serving approximately 100 high school students and some 350 adults. An advisory council was used in planning this extensive program which emphasized a food processing program for the community.

Mr. Walker holds life membership in the American Vocational Association and the National Vocational Agricultural Teachers' Association.


Shubel D. Owen

Shubel D. Owen, Professor of Agricultural Education, North Dakota State University, was honored as "1968 Faculty Lecturer" at North Dakota State University. Professor Owen was selected for this honor by a faculty committee of previous lectureship recipients after considering nominations from all departments in the University.

Professor Owen's lecture, "To Teach," was delivered in February to students and faculty at NDSU. A digest of his lecture appeared in the April, 1968, issue of *The Visitor* published by the Department of Agricultural Education, University of Minnesota.

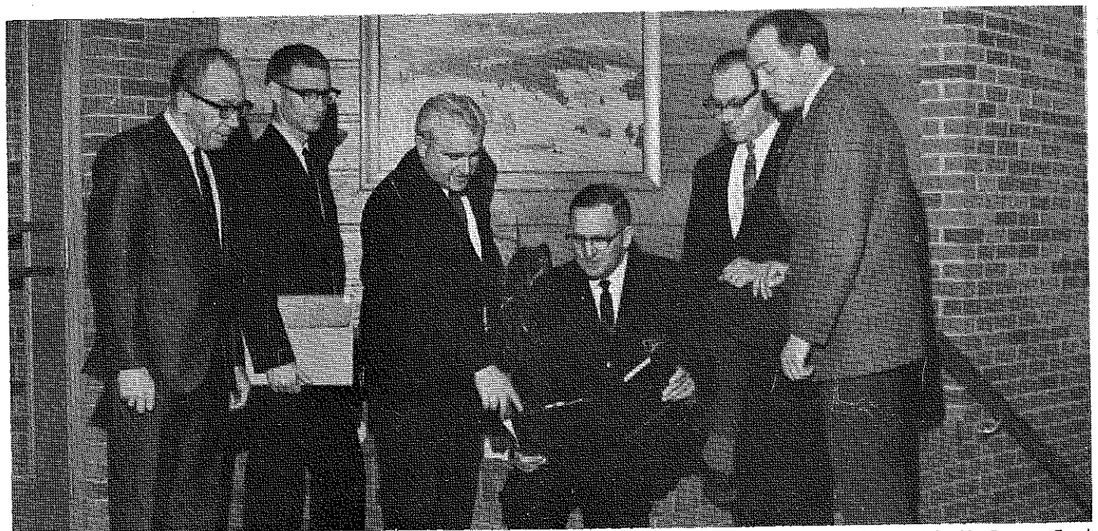
Professor Owen received the B.S. degree in 1927 and the M.S. degree in 1936, both from Iowa State University. Prior to coming to North Dakota State University, he taught agriculture and science in Iowa and served as Assistant State Supervisor of Agricultural Education.

in Pictures

GILBERT S. GUILER
Ohio State University

There is no substitute for a summer home visit if the teacher wants to make his teaching relevant to the home situation. (Photo by Earl Wineinger, Kansas)

D. B. Sheffield (right), teacher of agriculture at Rock Ridge High School, Wilson, North Carolina, supervises a class of adult farmers during a course on Small Engine Repair. Charles Barnes (left) is the special instructor for the course.



Recipients of 30 Minute Club awards in Montana in 1968: (Left to right) Basil Ashcraft, State Supervisor; Dan Watts, John VanDaveer, Frank Westfall, and Luther Lalum, Teachers of Agriculture; Max Amberson, Teacher Educator. (Photo by Max Amberson)

AGRICULTURAL EDUCATION

Agricultural Education

Volume 41 — September, 1968 — Number 3

Featuring —

AGRICULTURAL EDUCATION FOR PERSONS WITH SPECIAL NEEDS