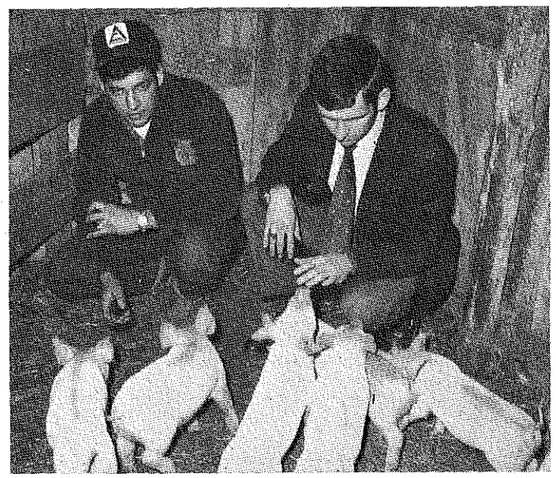
Gene McGrew, Teacher at Bushnell (Illinois) High School, supervises an academically disadvantaged student who views a slide film while listening to an audio tape which explains each frame. (Photo by Robert W. Walker)

Don Kind (left), Manager of the Games Unlimited Hunting Club, Hudson, Wisconsin, demonstrates to FFA officers the proper way of holding a Mallard hen to be sprayed with yellow or red florescont paint. Standing (left to right) are Harlan Jopp, Teacher of Agriculture, St. Cloud (Minnesota) Technical School; W. J. Kortesmaki, Executive Secretary, Minnesota Association FFA; Paul Day, State Supervisor, Minnesota; and Glenn Edin, Teacher of Agriculture, Owatonna, Minnesota. (Photo by W. J. Kortesmaki, Minnesota)

Stories in Pictures

ROBERT W. WALKER
University of Illinois



Production enterprises are an important part of the vocational agriculture program at Trousdale County High School, Hartsville, Tennessee. (Photo by Brown Draper, Vocational Agriculture Teacher, Hartsville, Tennessee)

D. D. Clemente (left), President of Mindanao Institute of Technology at Cotabato, Philippines, interviews Dr. Robert Holt, Director of the North Central Soil and Water Conservation Research Center, Morris, Minnesota, during a visit in May 1970 to the University of Minnesota and experimental stations and vocational schools in Minnesota. (Photo by Teofilo dela Cruz)

AGRICULTURAL EDUCATION

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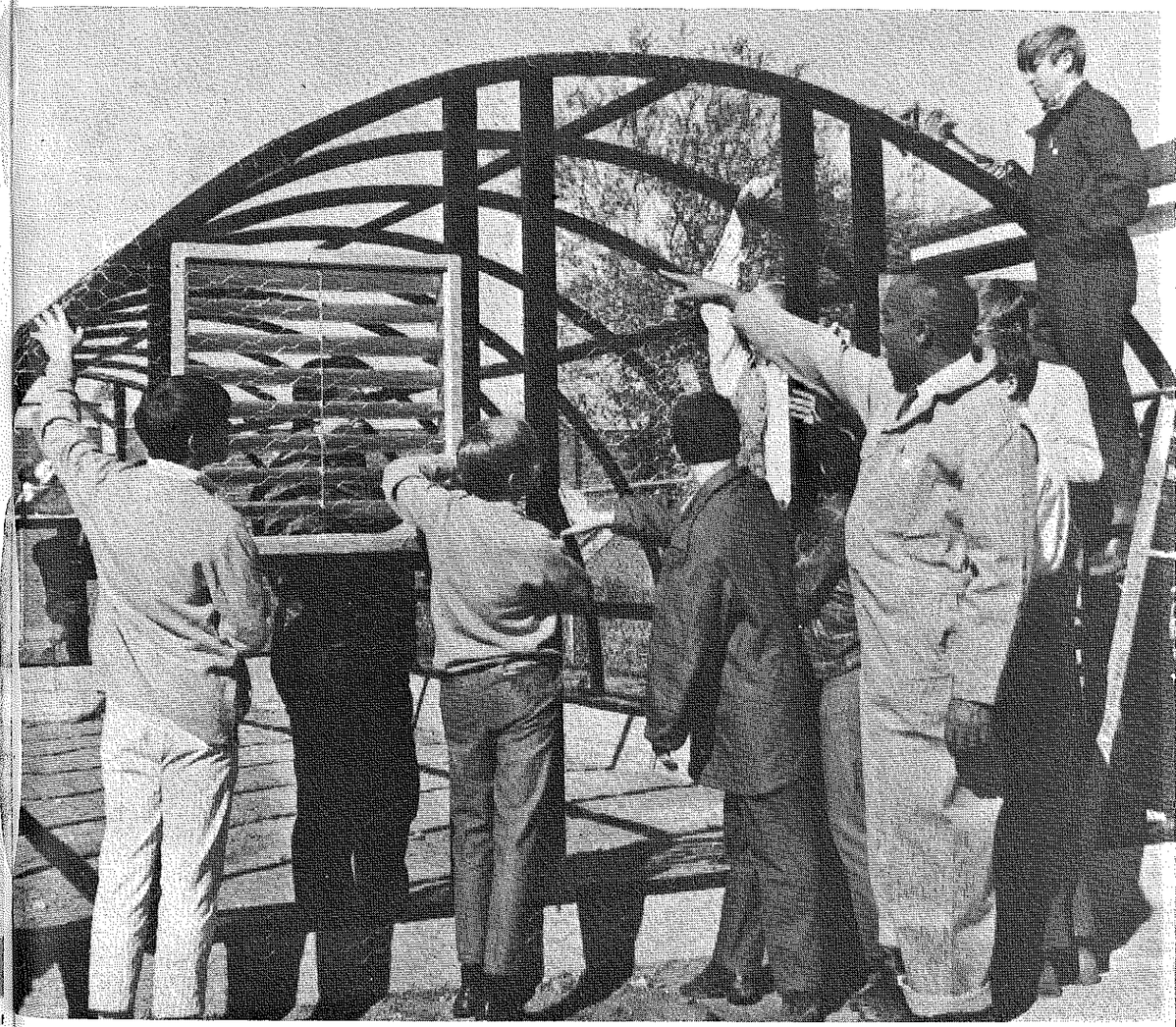

Featuring —

IDEAS FOR EFFECTIVE

THE
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MAGAZINE

Vol. 43 October, 1970 No. 4

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EDPRESS

Editorials

From the Editor . . .

The Basis for Effective Teaching

J. Robert Warmbrod

Basic to effective teaching is a thorough understanding of what teaching and learning are all about. Due to some rather far-reaching changes in agricultural education during the past few years, it is crucial that the teaching of agriculture be examined in light of what we know about teaching and learning. There are at least three current trends in agricultural education that have implications for effective teaching.

First is the high priority we now place on specialized instruction. This emphasis frequently means that subject matter is the primary basis for organizing course content. We must be on guard that such an arrangement does not result in subject-centered teaching in contrast to student-centered teaching, which is purportedly one of vocational agriculture's hallmarks. Next is the appropriate concern for teaching basic principles of agriculture and related sciences. How does a teacher go about teaching basic principles effectively? A third concern is that of providing instruction, particularly at the secondary level, which is applicable to a cluster of agricultural occupations. Here an understanding of the educational psychologist's concept of transfer of learning is essential. So what do we know about teaching and learning? Or more specifically, what are the foundations for teaching techniques and strategies which insure student-centered instruction, enhance the development and understanding of basic principles, and maximize the transfer of learning?

Motivation of students is the very crux of effective teaching. In the final analysis, students learn precisely what they want to learn. Occasionally, we complain that students are not motivated. Students are motivated, however. The problem comes in that their wants, interests, and aspirations do not correspond with what we think their motivations should be. The effective teacher gives more than lip service to the admonition that the wants, interests, and aspirations of students must be identified and learning activities provided which take these motivations into account.

(Continued on next page)

Guest Editorial . . .

The Teacher: Key to Effective Instruction

Millard Gundlach

Effective learning at any level begins and continues with a good teacher. Teaching effectiveness and learning achievement are goals toward which all conscientious vocational agriculture teachers constantly aim. Vocational agriculture has intrinsic qualities that make it "one-up" on many other subjects because of its hands-on-nature setting. The student has to perform to achieve. The student lives in the environment of the career field for which he is preparing. Effective instruction in vocational agriculture, however, is no better than the teacher and the methods he uses.

The first step in effective teaching is to be well informed. A teacher's ability to prepare students for careers in the agricultural industry is directly related to his information. That is why thousands of vocational agriculture teachers rely on information they receive from post-graduate courses, professional magazines, seminars, workshops, and the associate field of agricultural extension. The teacher must be prepared to help students with expected and unexpected problems in any phase of their work. "Staying one lesson ahead of the class" is impossible.

To gain effectiveness, the vocational agriculture teacher must believe in what he is teaching. He must have a sincere faith in agriculture and its implications on the total economy of our nation and the world. He must realize that there have been more changes of the agricultural scene in the past ten years than have been made in the previous fifty. Today the rapidly changing events on the agricultural front won't permit teachers to relax their efforts for a moment, if we are to continue providing an educational service to farm families and the agricultural industry in the years to come.

The vocational agriculture teacher must create an atmosphere for learning. Many books and articles have

(Continued on next page)

Millard Gundlach is Teacher-Supervisor of the Young and Adult Farmer Program at the Southwest Wisconsin Vocational-Technical School, Fennimore, Wisconsin. Mr. Gundlach currently serves as President of the National Vocational Agricultural Teacher's Association.

From the Editor . . .

One way of motivating students is teachers and students setting goals cooperatively thereby allowing students a high degree of identification with learning objectives. We know that students are more apt to throw themselves wholeheartedly into an activity if they have participated in selecting and planning the activity. Success in achievement is a strong motivating force. Teachers who fail to capitalize on these principles of teaching and learning can expect little success in motivating students. It is not happenstance that approaches to teaching which enhance motivation are part and parcel of student-centered instruction.

The best way to help students develop and understand a general concept or principle is to present the concept in numerous and varied specific situations, contrast experiences with and without the principle, then encourage precise formulations of the general principle and its application to situations different from those in which the principle was learned. Evidence indicates that it is best for students to work out the principle involved. The modern term for this approach to teaching is "discovery." We in vocational agriculture claim this approach as problem solving. How effective are we in using problem solving as a means of formulating general principles?

Directed learning is more effective than undirected learning. In the development of general principles and in the guidance of students in problem solving, teachers must present clues to direct students toward the successful discovery and application of concepts and principles. Transfer of learning and the development of general principles go hand in hand. Transfer is more likely to take place when the "thing" to be transferred is a general principle. For transfer of learning to be maximized, students must be provided practice in transferring what is learned in one situation to another situation. Students can learn how to learn; they can also learn how to transfer learning.

These are a few of many basic tenets of teaching and learning which are soundly supported by research. But, how are these and other principles of teaching and learning applied? That is precisely the role of the teacher. The task is difficult, but possible; it is essential for effective teaching. It is a task that can be accomplished well only by teachers who have more than passing knowledge and a scant understanding of the intricacies of teaching and learning. —JRW

THE COVER PICTURE

William M. Edwards, Teacher of Agriculture, Cherryville (North Carolina) High School, supervises students who are constructing a greenhouse which will be covered with plastic. (Photo by W. T. Ellis, A&T State University, Greensboro, North Carolina)

Guest Editorial . . .

been written on this subject, but I would simply condense these techniques to the rules of being a good teacher. He must be a good teacher at all times; his test of competence is a continuing one. He must be convinced that learning can be fun. "Learn" your class is another sound rule. Vocational agriculture teachers have a golden opportunity to learn about their students, not only their names but about their homes, their families, and the many details important to the individual.

As busy as he may be in a demanding profession, the agriculture teacher must plan his work carefully. Although the good teacher should be ready to "custom tailor" his course to suit his customers, planning each session is a necessity. Planning insures that the teacher knows the goal of the group, what material is to be covered in reaching the goal, which method is best, how the subject should be organized, how provision can be made for both group and individual instruction, and which aids are necessary to make the lesson more effective and interesting.

Students must be given a feeling of accomplishment. What better place can this be done than with supervised farming programs, cooperative work experience, and with the FFA? The instructor must use a variety of teaching methods. He must be expert in devising new and interesting methods and techniques as well as using old and workable ones. He must be willing to get away from the four walls of the classroom.

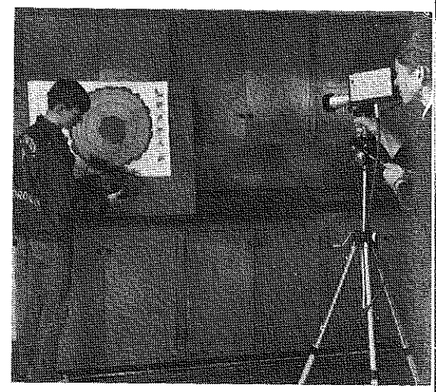
The vocational agriculture teacher must rid himself of "school teacherish" mannerisms. Many teachers over a period of years develop a classroom air of authority. This often creeps in unconsciously and becomes a part of the tone of voice, the attitude toward people, and the general bearing. An effective vocational agriculture teacher is more of a group leader. This leadership cannot be imposed; it must face the more difficult challenge of voluntary acceptance by students.

Themes for Future Issues

November	***Research in Agricultural Education***
December	***Innovations in Agricultural Education***
January	***Work Experience Programs for Agricultural Students***
February	***Placement and Follow-up of Agricultural Students***
March	***Environmental Science Education in the Agricultural Curriculum***
April	***Agricultural Education for the Disadvantaged***
May	***Professional Improvement for Teachers of Agriculture***

Videotape — An Effective Teaching Device

STANLEY OMDAL
Vocational Agriculture Teacher
Sedro-Woolley, Washington



This student records his oral report on tree identification on videotape for later replay to the entire class.

Stanley Omdal

Vocational agriculture has been successful over the years by having students practice "learning by doing." The use of videotape in the classroom provides another method of instruction that gives students an opportunity of doing something that can be evaluated quickly and allows them to make immediate self improvement.

Reports and Demonstrations

One of the most significant improvements I have noted since using videotape is in students' demonstrations and oral reports. Instead of presenting reports and demonstrations live in front of the class, students record their presentations on videotape in another room. After all students in the class have taped their presentations, the tapes are shown to the entire class.

Immediately after a student has recorded his report or demonstration on videotape, it is replayed for him to observe on the TV monitor. He can then see his strong points or any flaws that need correcting. If the student is not satisfied, he can record the presentation again and present a better report or demonstration for the students to see.

Other classes studying the same material can see the presentations without interrupting their classes. If they have given the same report or demonstration, they can compare their performance with others.

Since I have about 25 students per class, demonstrations that require close-up views have been more effective since using the videotape. Students' demonstrations showing dairy skills such as ear tattooing, clipping animals, trimming feet, and throwing an animal with a rope have been very successful.

Field Trips

Instead of taking a field trip to a farm or bringing an animal to the school, the portable videotape can be taken to the farm and the skill demonstrated and recorded then brought back to the classroom for presentation on the TV monitor. This can be a time-saver and in large classes all of the students can see what is being demonstrated. If some students miss a part of the skill or require another look, the tape can be reshown again.

I have found that students watching a classmate demonstrating a skill on TV are more interested than looking at a professionally prepared film or filmstrip. This has provided an effective teaching device and the student presenting the material feels that he is contributing to the education of the other members of the class.

Other Uses

Oral reports have improved as students use visual materials with their TV presentations. Student reports on diseases and pests of dairy animals provide the opportunity to use pictures, drawings, or sketches. I have found that reports with only the student's face on the TV monitor are not effective. Also, visual materials are required to keep the students' interest. In presenting oral reports on the identification of the trees, students used branches, needles, leaves, bark, cones, seeds, wood, and drawings or sketches of the important characteristics of the specimens assigned.

At our last FFA Parent and Son Banquet, videotape was used to show local FFA Foundation Award and Farm Proficiency winners. The pictures were taken on the boy's farm or home showing his accomplishments. Parents, school administrators, and community representatives attending this banquet were impressed with their accomplishments.

Benefits

Videotape is not the answer to all the teaching problems in vocational agriculture, but it serves as another technique of instruction that has proven effective in our program. It has added variety to instruction and has provided a very effective method for students to evaluate their presentations.

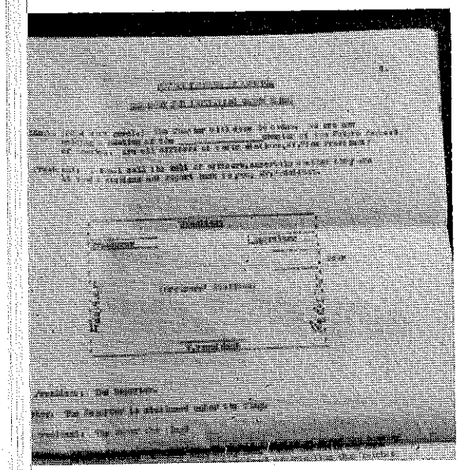
Students have had another opportunity to develop leadership in their role as program directors and in operating the camera. The equipment is simple to operate and gives students the responsibility of handling the videotape and camera.

Records Indicate Origin of FFA Ceremonies

PRINGLE J. MYERS
Coordinator of Vocational Agriculture
Chatham, Virginia

The record of an event that led to the development of the FFA initiation ceremony was discovered recently in a wooden, shop-made filing cabinet at Dan River High School in Pittsylvania County, Virginia. The 42-year old minutes of a conference of Middle Virginia vocational agriculture teachers, held November 1-3, 1928, included the following statement:

On Friday, November 2, 1928, the Dan River Chapter of FFV's initiated twenty-one freshmen using the opening and initiation ceremony for the visiting teachers to observe.



Close examination of this copy of the opening ceremony first used by the Future Farmers of Virginia in 1928 reveals it to be the same as that used to open FFA meetings today.

Initiation Ceremony

A resolution adopted November 3, 1928 by the agriculture teachers who attended the conference stated that they believed the initiation ceremony to be the best they had heard. They heartily recommended it for adoption and congratulated "Mr. Groseclose and Mr. Love on this most excellent piece of work." They also recommended that the ritual be used for all degrees by every chapter in the nation. They thought it commendable that the ritual used on November 2, 1928 was solemn and dignified.

Harry M. Love referred to in the above-mentioned resolution was teacher of vocational agriculture at Dan River High School and Future Farmers of Virginia advisor during 1928. He is now Professor Emeritus of Agricultural Economics at Virginia Polytechnic Institute. Relative to the demonstration conducted November 2, 1928, Dr. Love stated: "Henry C. Groseclose arrived several days before the meeting and wrote the initiation ceremony while staying at Hotel Danville. My students had only one day to learn and practice the opening ceremony and Green Hand initiation."

Groseclose Comments

According to the minutes of the teachers' conference, Henry C. Groseclose, who was agricultural education itinerant teacher trainer at the time, was called on for comments. His remarks were recorded as follows:

—The opening ceremony should be used to open each meeting of an FFV chapter and another ceremony used for closing.

—The new designations for FFV degrees are: First, Green Hand; Second, Future Farmer; Third, Virginia Farmer; and Fourth, American Farmer.

—The instructor is considered a member of the FFV chapter and should pay state dues.

—The National organization of vocational agriculture boys has been perfected and the first meeting is to be held in Kansas City. One boy from Virginia is to be sent to Kansas City as a candidate for president of the Future Farmers of America.

—There will be a meeting of the Virginia Vocational Association on Friday before Thanksgiving. The Supervisor of Vocational Agriculture in Georgia and Governor Harry F. Byrd are scheduled to speak.

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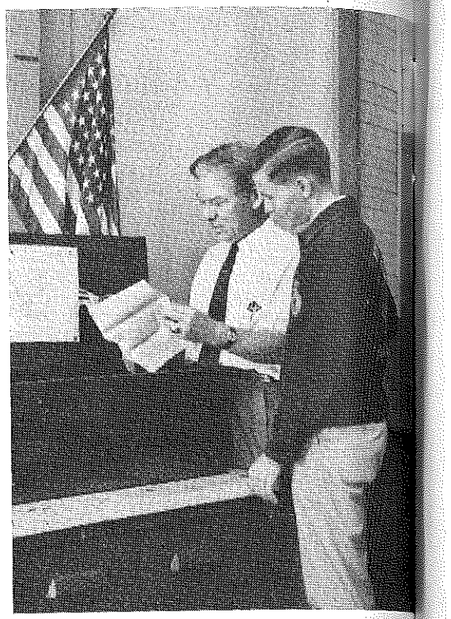


Pringle J. Myers, Coordinator of Vocational Agriculture, Pittsylvania County Virginia, and Jimmy Finney, a past vice president of the Pittsylvania County FFA and a recent agricultural education graduate at VPI, examine a copy of the opening and initiation ceremonies first used by the Future Farmers of Virginia which had been stored in the home-made chest since 1928. The ceremonies were adopted by the Future Farmers of America.

Innovative Technique for Teaching Communication Skills

RAY L. JOHNSON, Graduate Student
North Carolina A & T State University
and
J. H. DICKENS, Teacher of Agriculture
Elm City, North Carolina

In today's world of instability and change there are many cries for relevancy and innovation. This is apparently true in occupational education, particularly when it comes to effective teaching practices.

One cannot always say that because this technique or that teaching practice is not new that it is not relevant. If it has been used many times and has proved to be successful and still has merit, then it must be relevant. However with any teaching procedure, there can be a new twist, a fresh approach, and a reassessment of what already exists.

New Idea

With a group of freshmen enrolled in the Introduction to Agriculture course we tried a new idea using a tape recorder and a skit. The lesson was on "The Importance of the Voice in Communicating Effectively and Making a Good Impression in a Job Interview." The skit was called "Who's Going to Take Me to the Fair?"

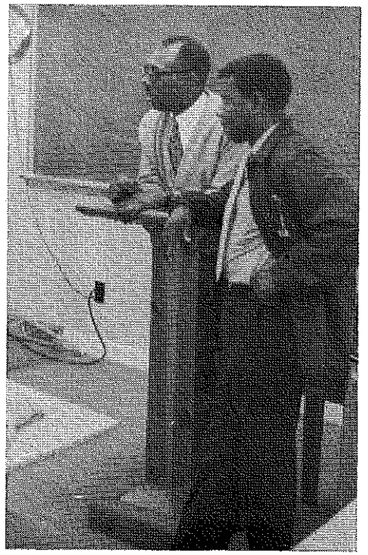
The skit consisted of fragments of anecdotal information about each student and references about each student. A young lady, unknown to the students, was used to record the skit on tape. A day later the tape was brought to the classroom and played to the students. Their reactions varied from dire amazement and general alarm to pure shock upon hearing their names mentioned by this unknown female voice and her seemingly well versed knowledge about each of them.

Effective Teaching

At the completion of the tape, the students were given a few minutes to improvise responses to the young lady. Each was to convince her that he was the best and most logical aspirant for a date with her at the fair. In turn, they recorded their voices each doing his utmost to be a charmer, a go-getter, convincing, and alluring to the young lady.

After the recordings were completed, the tape was played back for them to hear. After the laughter ceased, there was some serious discussion. The students were very objective. They participated readily in discussion and made suggestions relative to what would be needed in similar situations such as job interviews, college interviews, and salesmenship approaches.

With techniques such as this, creativity and self-examination can be used effectively in teaching. A highly desirable learning situation is created for the teacher as well as for the students in the communications facet of occupational education in agriculture.



J. H. Dickens (left), Teacher of Agriculture at Elm City, North Carolina, is a Cooperating Teacher for North Carolina Agricultural and Technical State University, Greensboro, North Carolina. When this article was written, Ray L. Johnson (right) was a student teacher at Elm City High School. Currently Mr. Johnson is a graduate student in Agricultural Education at North Carolina A&T State University.

Records Indicate Origin of FFA Ceremonies

(Continued from page 82)

The opening, closing, and initiation ceremonies developed for the Future Farmers of Virginia organization were adopted, with few changes, by the Future Farmers of America organization. The present "sentinel" was then "farm watch dog." The advisor was "stationed at the owl's nest' instead of "here by the owl." A few other minor changes can be found.

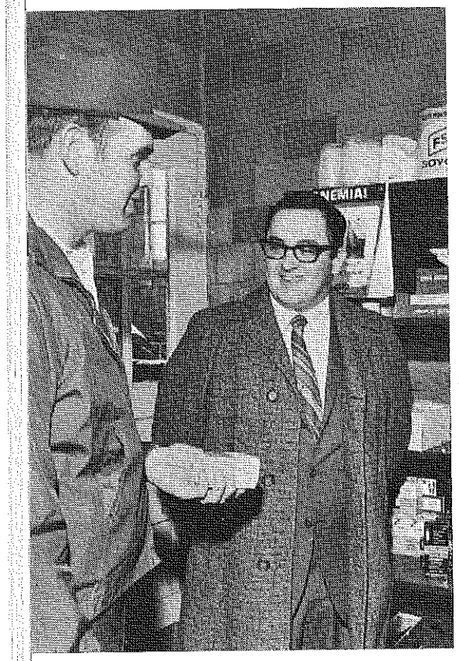
Archives

The minutes of the meeting held November 1-3, 1928 and a copy of the initial wording of the opening and Green Hand ceremonies are now filed in the office of the Division Superintendent of Schools, Chatham, Virginia. They will be sent to the National Headquarters of the FFA to be placed among the archives if a request is received.

Orientation to Careers in Agriculture

DONALD W. SHEPARD
Vocational Agriculture Teacher
Williamsburg, Iowa

A farm boy who leaves agriculture is doing himself a great injustice. If he is interested in medicine, I suggest veterinary medicine; if he aspires to be an engineer, I encourage agricultural engineering; if it's education he chooses, I recommend agricultural education. Every student in by program, whether he be from the rural area or town, is there because he likes agriculture.



During a visit to a training center, Donald W. Shepard (right) confers with the manager of an agricultural supply firm. Mr. Shepard was Region III winner of the 1969 NVATA Career Orientation Contest. (Photo by Iowa City Press-Citizen, Iowa City, Iowa)

• The Situation

During the past six years, enrollment in vocational agriculture in the Williamsburg Community Schools has increased from 44 to 82 students. From 1954 to 1968, the average size of farm in the county increased from 189 acres to 249 acres; the number of farms in the county decreased from 1,939 to 1,476.

Fifty-eight per cent of the students studying vocational agriculture at the Williamsburg Community Schools from 1952 to 1967 are working in agricultural occupations: 35 per cent are farming; 3 per cent are farm laborers; 3 per cent are studying agriculture in college; and 17 per cent are employed in agribusiness.

A survey of the vocational agriculture students in the spring of 1969 indicated that 52 per cent were interested in fields of agriculture other than farming. Ten years ago this same figure was less than 20 per cent. Because of changing trends, an additional 20 per cent of those presently interested in farming will need to be encouraged to seek related employment.

• Career Orientation

I believe that agriculture is changing and that opportunities in agriculturally related occupations are unlimited. Therefore, agricultural career orientation programs should be conducted at all levels of the vocational agriculture program. Our Departmental Advisory Council has been used in an effort to develop a program that best serves the young people of the community.

Agricultural career orientation begins with the eighth grade and continues throughout Vocational Agriculture I, II, III, and IV. Most of the instruction comes during the senior year and is offered to students having at least two years of vocational agriculture. This course is offered as a fifth vocational agriculture course. It is offered during the last period of the day. Boys enrolling in the course arrange their schedules so that the period proceeding the last period can be free.

The first semester of the course is spent in the classroom studying the following topics: an overview of the agricultural industry, career opportunities in agricultural occupations, agricultural sales, human relations, job interviews and applications, employer-employee relations, employee-employee relations, proper dress and social graces, business relationships, sales slips and their use, how to take an inventory, using business budgets, credit policies, and developing plans for a work experience program. This material is supplemented with tape recordings, films, film strips, and guest lecturers.

• Work Experience

During the second semester, students are placed for work experience. The students work during the last two periods of the day and after school. Many also work on Saturdays. Since the career orientation program was begun, students have been placed for work experience in the following business: farms and custom farm work, Soil Conservation Service, farm supply cooperatives, elevators, farm implement dealerships, and teaching vocational agriculture.

• Evaluation

The career orientation program receives a very complete and objective evaluation annually through the four steps indicated below.

—The departmental advisory council meets annually to evaluate the career orientation program.

—Each cooperating work center completes and returns an evaluation questionnaire concerned with the career orientation program.

—Each student completes an evaluation questionnaire.

—The program is also evaluated by the high school administration, school board members, parents, and the two vocational agriculture teachers.

The program will continue in the future on an expanded basis with minor changes being made as needed.

Preparing Substitute Teachers of Agriculture

RICHARD L. SPARROW
Vocational Agriculture Director
North Manchester, Indiana

What do your students do when you, are absent from the classroom? Do you neglect to attend professional meetings because there are no qualified substitute teachers in vocational agriculture? Do students do busy work while you are gone?

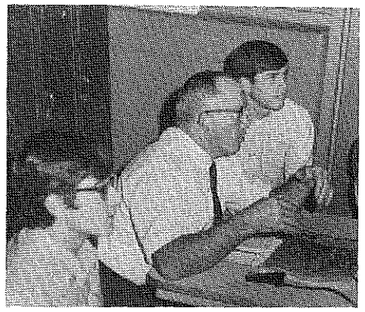
As a teacher of vocational agriculture, I believe it is my responsibility to be professionally prepared with the latest ideas and techniques. Also it is the responsibility of the teacher to take part in professional programs and meetings which might take some time out of the classroom. In the past I have felt unable to take advantage of professional-growth meetings or take part in professional organizations due to the fact no qualified substitute teachers in vocational agriculture were available in the community.

Preparing Substitute Teachers

The Manchester Community School's Vocational Agriculture Department in cooperation with the Research Coordinating Unit, Vocational Division of the Indiana State Department of Public Instruction, developed a method of preparing agriculturists to substitute in the classroom using demonstrations of approved agricultural practices. The method includes the preparation of the agriculturist and instruction on techniques of presentation.

The agriculture advisory committee selected individuals who were very successful in specific areas of agriculture and agribusiness. These names were given to the Vocational Agriculture Director. The individuals were contacted to determine if they would be willing to spend some time learning about methods of presentation for use in the classroom as substitute teachers.

After the agricultural specialists agreed to spend time in preparation and presentation of his topic, they were asked to attend a class taught by the Director of Vocational Agriculture on teaching methods which could be used successfully by lay personnel. Methods of instruction taught included demonstrations, field trips, and slide lectures. Areas of instruction included production, management, finance, conservation and small tool selection. Three basic points were stressed for use by substitute teachers in making presentation: the introduction by giving the background of his area; the presentation of his expertise in the specific area; and the evaluation of what was presented.



A farmer who specializes in beef production explains grade and yield marketing by the use of slides as a substitute teacher of vocational agriculture.

The agricultural expert makes five presentations of the same lesson during his day of substitute teaching. A different substitute teacher is used each day that the regular teacher cannot be in the classroom. The substitute teacher is paid for his time and effort on the regular substitute teacher pay rate. He has all the privileges and responsibilities as any other substitute teacher and is given extra attention by the school administrator to insure successful experience in the school system. At the conclusion of the day each student is asked to evaluate the teacher's presentation.

Evaluation

This program has allowed vocational agriculture teachers to attend national judging contests, the National FFA Convention, and NVATA national meetings as a delegate of the state association which would have been impossible if qualified substitute teachers had not volunteered to assume the responsibility of the classes while the teachers were absent. The program works very successfully when the absence of teachers can be planned in advance. However, the program does not meet the needs of an emergency absence which cannot be foreseen.

An unanticipated reward of the program has been the improved public relations built by the school and the Vocational Agriculture Department with members of the community. The community, through the substitute teachers, has a better understanding as to what is done not only in the vocational agriculture program but also in other areas of the high school curriculum.

Richard L. Sparrow

Richard L. Sparrow is Vocational Agriculture Director, Manchester High School, North Manchester, Indiana. Fred Russell, Agriculture Occupations Teacher at Canton, Illinois, was declared Region IV winner in the 1969 NVATA Exchange of Ideas Contest for presenting Mr. Sparrow's idea which is described in this article.

It's Great to Get to School

WILLIAM C. PRINZ and RICHARD L. SANDERS
Teachers of Agriculture, Parkland School
Pinellas, Florida

The vocational agriculture program at Parkland School (Pinellas Park, Florida) is for boys with both physical and mental handicaps. The students range in age from fourteen to twenty-one years. Work experiences are offered under the direction of two full-time vocational agriculture teachers.

Experiences provided students encompass the following types of work: landscaping, vegetable gardening, ornamental horticulture, and plant propagation. In conjunction with work experience, individualized instruction is the technique used to achieve acceptable student work habits. The ability to follow directions, work in a group situation, complete an assigned task, and punctuality and dependability are the general work habits that we are developing in students.

Facilities

A total of five acres is presently under cultivation. In addition, the Pinellas County School Board has allocated an additional ten acres for the future use of field grown plants. Care of all the property of Parkland School also provides learning experiences for students as they maintain the landscaping and care for the lawn around the five buildings that make up the campus.

Under a recent federal grant, 4,000 feet of pipe was purchased in conjunction with a five horsepower electrical pump and deep well for irrigation. This system is manifold controlled and the students can operate separate sections of the system as needed. Additional equipment purchased with the grant includes 70 operating sprinklers, a diesel tractor, rotovator, arps rake, and a pair of middle busters.

The entire campus of the school is a land laboratory. Vocational Rehabilitation funds were used to construct a 20′ by 40′ temperature controlled greenhouse. Local contractors supplied the necessary fill to elevate what was once considered swampland so that the students have now created a nursery and vegetable garden from what was once low land.

Philosophy

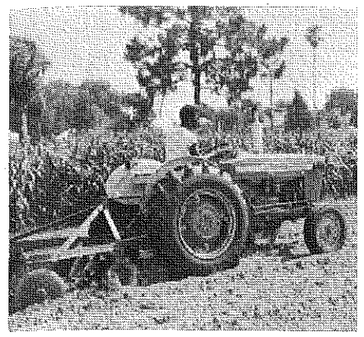
With the cooperation of the community and the support of the county vocational education department, Parkland School is afforded the unique opportunity to demonstrate the basic philosophy that every student has worth and can contribute to society. Because of the nature of the students at Parkland School, their learning comes from firsthand rather than vicarious experiences. The students have to be taught in a highly structured manner. Most of the things that a normal child might master without any difficulty pose a problem for our students.

When you consider that two agriculture teachers have 36 boys under their supervision, it is like saying there are 36 individual instructional plans in operation due to the varied differences of the students. What would normally only take verbal directions for the regular students is not adequate for these boys. They need instruction in actually doing the task even to the extent that the teacher might have to teach the boy the action that his muscles will feel when cultivating. It is not uncommon to see a student and the teacher using the same tool at the same time in order that the student gets the feel of the tool being used.

Supervision of students almost requires that you have eyes in the back of your head. You can take nothing for granted. When it is time to plant a crop, one student will operate a jig that spaces the seed and punches holes in the soil at the proper depth. Another student will put the required number of seeds in the hole, followed by a student who covers up the planted seed.

All jobs are broken down into the smallest and simplest unit that is possible. One student might be a good planter and another student might be a good worker at stacking cans in the nursery, but the reciprocal is not always true. If all a student can do is pull weeds in the canned nursery stock, then this is where the student works and self-confidence is built in the individual by letting him know that the job he is doing is important.

Work experiences for students at Parkland School include planting nursery stock which the students have grown.



Students at Parkland School prepare the soil for growing vegetables.

Are We Accepting the Challenge to Change?

PHILLIP B. WINTERS
Vocational Agriculture Teacher
Elizabeth, West Virginia

Phillip B. Winters

This is my tenth year as teacher of vocational agriculture at Wirt County High School, Elizabeth, West Virginia. I came to this small, rural county, which has only one high school, in the summer of 1961. That year I taught only production agriculture and shop.

In surveying the school area, additional employment areas were not available. As students graduated, they moved away or found employment in industrial plants in the Ohio Valley. Some enrolled in college, but primarily in fields of study other than agriculture.

Expanding the Program

During my first years we studied employment needs and areas of interest to students, parents, business, and professional people. No sign of interest was ignored and each suggestion received was given careful consideration. Many students kept saying they would like to take vocational agriculture but had no place to conduct a supervised farming program. We carefully studied this situation and as a result was able to secure a 65-acre farm on a rental basis. The farm was made available to the school for vocational education purposes.

Administrators were presented with the proposal of securing equipment and expanding the program. A loan was secured from the local bank to purchase a tractor, mower, and plows at low interest rates. A used disc was purchased and rebuilt by the students in farm mechanics classes.

To pay for this and additional equipment which has been purchased the students did garden plowing and other work as long as educational opportunities were present. The program has now expanded to include a full line of equipment for hay harvesting, seedbed preparation, corn planting and spraying.

Demonstration plots are used where possible on the farm to show weed control methods in corn, forage plots, and fertilizer treatments. This has definitely added much to our program and has proven very helpful to students with crop enterprises.

Planning Programs

An advisory committee was formed to help in surveying the area and in discussing needs for additional programs. This group was appointed by the Board of Education from a list of names which had been suggested to the County Superintendent of Schools. This group includes a banker, a member of the Board of Education, a rural mail carrier, a farmer, an industrial worker, and the County Agricultural Extension Agent. This group is instrumental in helping to plan and promote programs.

In 1969, a second teacher was employed to teach agriculture mechanics, agriculture sales, and vocational agriculture. The population of our school area is in a transition stage. Employment opportunities for students are changing from the production agriculture program as we have known it for years to include all the related areas of instruction. Are we accepting the challenge to make the necessary changes?

Instruction to Meet the Needs of the Community

EARL E. GRAY
Teacher of Agriculture
Angier, North Carolina

The Angier (North Carolina) community, like so many other rural-oriented communities, has a citizenry that is leaving the farm as an occupation but not as a place to live. Angier High School has 97 students enrolled in vocational agriculture. Only fifteen of these families earn a living from farming. The 20 to 25 graduates each year are going into occupations for which an agricultural background is suitable. However, many of these occupations are outside agriculture as we define it today.

Expanded Program

A study of our graduates' employment records indicated they were going into selling and servicing jobs primarily. We also realized that employment opportunities are available in these areas; therefore, we decided to provide some initial training in fields other than production agriculture.

The enrollment in our high school is not large enough to support Distributive Education, Trade and Industry, or Industrial Cooperative Training as well as Vocational Agriculture. More flexible policies were needed so that a program that would cut across all the vocational services could be developed.

The business sector of Angier can support a cooperative work program for about 25 students. These jobs include only about five that are entirely agricultural in nature.

Planning the Program

A survey was conducted to determine employment needs as well as the interest of our local leaders and businessmen. Several conferences were held with local leaders, the high school principal, county personnel, and the district supervisor. From these conferences, adequate funds were included in the county budget to finance a pilot program in Agriculture Sales and Service. Plans were presented to the state vocational leaders for an additional agriculture teacher to conduct the pilot program.

Students were interviewed to determine their interest. Thirteen boys and thirteen girls were selected to enroll.

Reference books were secured but were not adequate to cover needs. It was necessary to draw on local resources in order to have materials to motivate and meet the needs of students in a realistic manner. We bring products, sales information, and other pertinent information into the classroom as well as take students to the various business establishments for instruction. Individual instruction is provided by employers to each student that is related specifically to the work that students are performing.

Delivering oil is part of this student's on-job experience.

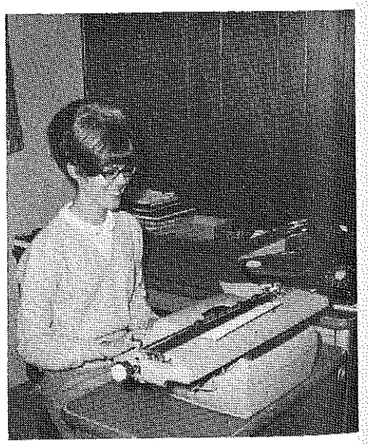
Placement

The thirteen girls and thirteen boys are divided into two classes. Eighteen of the students are seniors and eight are juniors. The juniors will continue into the second year of the program.

Earl E. Gray

Earl E. Gray was Region V winner of the 1969 NVATA Career Orientation Contest.

One or more students are placed for employment experience in the following types of businesses: grocery stores, florist shops, nurseries, farms, food service establishments, gas stations, sales firms, insurance company, and local newspaper. This variety of jobs has helped to provide a wide range of classroom experiences which are necessary to prepare students for the world of work.



This Agricultural Sales and Service student types an insurance policy as part of her on-job training.

GUIDANCE: ESSENTIAL FOR EFFECTIVE TEACHING

CURTIS JENSEN
Teacher of Vocational Agriculture
Garrison, North Dakota

Curtis Jensen

What follows is an attempt to make guidance a significant part of teaching agriculture. It is not intended as a model, for each teacher's situation is unique. If I can lay claim to any success in teaching, it is in motivating students with a poor self-concept by giving them a series of gentle shoves in the right direction so that in the end they become contributing members of society. I have taught a surprising number of students who were evidently headed for the scrap pile via the drop-out route who stayed in school, went on to post-high school education and gained self-respect and good jobs.

Reference File

I keep the most used set of personal references in the school. In fact, these records are used at least five times as much as the "real" student files. The files consist of one 4″ x 6″ index card for each student. I keep the cards fastened together with a rubber band on my desk.

On the first day of school each student is asked to fill out the front side of the card which includes his name, birth date, parent or guardian's name, mailing address, phone number, daily class schedule, extra-curricular interests, and his lock and locker number. With this information I know how to get in touch with him at any time during the day.

Interviews

Starting with the first day of school, students are scheduled for interviews with me, usually in the morning before classes. I ask who can stop in the next morning for a five-minute visit, and they usually respond favorably. This may be a student's first appointment that his parents did not arrange. I learn a lot about his attitudes and habits before he gets to my office. If he is on time, I reinforce this habit with a little notice of it. If he is late I know one of his weaknesses and can start figuring a way to help him cure it.

I have all the cards in one bundle. I greet him and get out his card. My first question is usually, "Where do you live?" I nearly always know this, but this gets the visit off to a good start since it manifests an interest in him and establishes the logic of my taking notes on the conversation. Then the questions follow in this order: "What do you like?" "What do you mean, what do I like?" "Well, what do you like to do?" The answers may be anything from raising cattle to shooting pool. My notes are made thusly: Likes — pool, driving tractor, softball, swimming.

I ask him what subjects he liked best last year. This keeps him from naming vocational agriculture to curry favor and lets present teachers off the hook to some extent. I ask him what things he likes least and put these down also.

I ask him what he would like to do for a living. This appears to be the first time that many students have ever realized that they may one day have to make a living. Dislikes tell a lot about a student and his problem. Many losers are given menial jobs at home that do nothing to enhance their self-concept. Often what a lost student needs most is a chance to do a meaningful favor for someone whom he respects such as you, another teacher, or the coach.

Relationships with Peers

The relationship of a student to his peers is highly important. This information is useful to the teacher. In the interview I ask him to name the students he would most like to work with in shop. I record these as his social preferences.

Early in the first year I find an excuse to have students choose sides for two or three sessions. A spelldown, a demonstration, or a test based on the spelldown principle works quite well. A written record of the sequence in which the boys are chosen will quickly give you a good idea of who is popular and who is unpopular. At the second occasion two students who were chosen last the first time are "accidentally" made captains. Now they get to do the choosing. Moving the captains around helps spare anyone the humiliation of always being chosen last.

Knowing the social relationships that exist among students are helpful in many ways. If a student is an outcast (he may be very poor, have a dirty home, or have a relative on the staff or school board), the other students will unconsciously resent any attempt by authority to change his status.

I have found that blame and praise in public are of little use and are often worse than useless. Private encouragement or reprimand, when the situation is one to one, is nearly always taken in the spirit in which it is given. Encouragement or reprimand given in the presence of a third party is often suspect as to motive.

I believe I gain more, often a great deal more, with an office interview than I do on a home visit. I do not consider office interviews a substitute for home visits, but for me they are a valuable supplement.

Self-Concept

When a student gets an unsatisfactory progress report or a failing grade for the first time in his high school career, an emergency exists. He is at a crossroads when it comes to his self-concept. He is about to decide whether he is to play the role of failure or success. He needs help today.

My system for discovering his con-

(Continued on page 91)

Teaching Elementary School Pupils About Agriculture

ROBERT G. KEENAN
Vocational Agriculture Teacher
Parkton, Maryland

How do you help the people in your community appreciate agriculture? How do you show the public that agriculture students can contribute positively to the school and community? This article describes one way the agriculture students and teachers at Hereford High School, Parkton, Maryland, faced these problems.

Our school, which has the only Agriculture Department in the county, is in a largely urban and suburban area. Many teachers of elementary school children are always wanting their pupils to visit a farm. Many farmers are reluctant to have groups of pupils visit their farms. The reasons are various: farmers are busy when the teachers want to visit; there are possible insurance problems if someone gets hurt; and some farmers just do not want the inconvenience.

Kiddie Farm

With these facts in mind and a couple of acres of ground, the answer was obvious. We decided to have a "Kiddie Farm" where visiting elementary pupils could touch and feed animals.

The idea was presented to a very cooperative administration and received enthusiastic approval. The next step was to get the cooperation and support of the 250 students in the high school's Agribusiness Department.

A steering committee of one senior, one junior, and four sophomores was selected. The remaining students volunteered for work on one of the 28 committees. Because of the time involved in meeting with each committee, the two teachers of agriculture worked on a formal basis with the steering committee rather than with all of the other committees.

These young boys got to touch and pet a duck — a "first time" experience for many of the visiting elementary school pupils.

Ideas

The sub-committees submitted ideas to the steering committee for approval. The steering committee met every other week after school to sort out the ideas given to them. Trying to get the students involved was the idea. We didn't need to worry, they had plenty of good ideas. Here are some of the students' ideas that were used.

—We had exhibits of poultry including ducks, geese, and chickens. We were able to purchase some 20-day-old eggs and borrow an invisible hen so that the pupils could see chicks hatch.

—One of the activities was a result of a dairy products unit in the Plant and Animal Science course — making butter.

—We were able to show two market barrows and let the boys and girls touch them. Our students explained where the different cuts of meat come from by using a chart and pointing out the areas on the animals.

—We had some 8-week-old pigs. It would have been better to show a sow and litter.

—Calves two to six days old were a great delight to the children, particularly when the boys and girls were allowed to feed them with a nipple bottle.

—Goats and a ewe with a small lamb were also of interest.

—We were able to show the pupils a self-propelled combine, a baler with the chamber full to show how hay is baled, and a plow that had made a 10-foot furrow to show how ground is prepared for planting. The pupils watched a hand corn sheller work and fed the shelled corn to the pigs.

—The pupils showed great delight

Visiting elementary school pupils see a plow and a furrow and learn how soil is prepared for planting.

when they were able to shake hands with Smokey the Bear and the local forest ranger.

—The boys and girls were given a hay ride, pony ride, and had an opportunity to jump into a pile of straw.

As you can see, the activities were not elaborate. Simple ideas were the best. The more technical the idea, the more confusing to the elementary school pupils.

Operation

All of the activities were spread out over our three-acre Farm Fair grounds. Pole barns provided shade for the animals and the guides who explained each activity. The Kiddie Farm operated for three days during the last week of April. We used Monday and Friday as preparation and clean-up days.

Invitations to the first and second grades of six schools were made by the Board of Education Office. We tried to keep the visiting schools to about 95 pupils each. One school brought 185 pupils which was a little overwhelming at first. But that actually turned out the best for us since it kept all our students busy as guides.

When each school arrived, the pupils were divided into groups of ten. A student guide, one of our agriculture students, was assigned to each group for the duration of the visit. The visit was intended to last two hours. One school arrived for a tour in the morning and another in the afternoon. We are fortunate to have property that can be used as a picnic area, so the schools were invited to use that facility also.

Moving in groups of ten with a parent from the visiting school made the pupils easy to handle. Depending on the activity, one to five agriculture students were stationed at each stop to explain what was going on. The visiting pupils spent about ten minutes in each area.

The students assigned to the areas were available during their regular 50-minute class period. This was done to allow them to be more versatile and to cut down on absentees from other classes. We desired minimum disturbances to the regular school program during the venture. This made an impression on the faculty.

Information

Prior to the visit each elementary teacher was sent a list and description of the activities to take place. During the visit each teacher was given a detailed written explanation of each activity. The written explanations paid off because they also were the basis for our students' explanations. We realized that a few of the agriculture students would not have all of the details for each activity. We wanted to give them confidence and to prevent some from becoming too technical. We did not encourage technical information, but we did encourage students to talk freely in an area in which he or she felt comfortable.

When leaving, each teacher was given a Smokey the Bear book-mark for each pupil, seed corn from the corn sheller, and packages of tomato and marigold seeds to use as a followup at their school.

Results

A total of 650 elementary pupils visited the Kiddie Farm. The results warrant a repeat next year. Faculty members at our school were able to see and appreciate their students in another atmosphere. The agriculture students appreciated planning and organizing the event. They were amazed at what they could do. The visiting pupils, teachers, and adults appreciate agriculture a little bit more as a result of their visit to the Kiddie Farm.

This is just one idea — try something. Your agriculture students are great; just give them a chance. Show the public that the school's Agriculture Department is a part of their community.

Guidance: Essential for Effective Teaching

(Continued from page 89)

dition and getting help involves the following. The secretary is given a list of all my students and asked to list any "unsatisfactory progress reports" at the end of the first four and one-half weeks of the quarter. Once the students are identified, the student's file is consulted as are other teachers. An attempt is made to find out what he can do well.

If some teacher can give him a job that he can do with pride, his whole attitude toward school and society may be slightly changed for the better. After all, most problem students today are people like ourselves who have become disillusioned with the system. They have no faith in what we are teaching. I believe that the student is the teacher's job, and the subject is the medium.

Follow-Up

I follow-up students. Many return to visit in subsequent years. When they show up, we get out one of their old cards, which have been filed, compare notes, and add a little to the latest one. When someone needs a reference or an employer is looking for someone with certain qualifications, the cards come in handy.

Slide Presentation Contributes to Maximum Learning

BILLY N. STANGER
Vocational Agriculture Teacher
Christianburg, Virginia

Billy N. Stanger

The amount of material for use in agricultural education is extremely large and growing at a rapid rate. If we are to cover the necessary material in the time allotted, we have to make the most efficient use of time and material. Each student must be taught as an individual and at the same time be a part of a class.

• Slide Presentation

I would like to describe one method which can be used for classes or by individuals. The method makes use of equipment many of us already have. It is based on learning by hearing, seeing, and discussing and then by doing. It works equally well for retention of information or for developing skills.

Let's call the method coordinated slide presentations. It is accomplished by the use of a remote controlled slide projector, a stereo cassette recorder, and a synchronizer. These must be used as a unit to record and play back the commentary on one track and the inaudible impulse for automatically advancing the slides on the other. A rear view projection screen using close angle lens with correctly placed mirrors can be viewed with ease in a well lighted room or shop.

To be most effective, the stereo tape recorder must have a pause button allowing the use of an overriding manual control to return to previous slides when necessary and for instant and smooth stopping of the tape on the slide being shown for answering questions and for discussion.

To be most effective, slides must be in color. Slides should also be arranged in a logical sequence with sufficient numbers to develop a presentation that has continuity and brings out the information or skill you desire students to learn. Excellent slides can be bought; however, to make a complete presentation to suit the situation, you will have to make many of your own slides. The tape should be done by several different people to relieve the monotony of one voice.

• Other Materials

There needs to be other reference materials available. Other audiovisual materials, particularly 16mm color sound movies, film loops, and overhead transparencies, and actual specimens are particularly needed. Also there needs to be a definite plan and some written device for guiding students through the presentation in an orderly manner.

Let's use for an example the teaching of safe tractor operation. We use for a basic reference "Tractor Operation and Daily Care" and the accompanying 159 slides that are available from the American Association for Instructional Materials, Athens, Georgia.

These slides are excellent. I can add several slides and titles to make it very complete for our situation. There must be one or more tractor operator's manual for each tractor as well as other basic references and audio-visual aids.

• Procedure

In using the tape as a commentary, each slide or group of slides is allowed to progress automatically until a question is asked or until all slides for a particular topic on the work sheet are completed. To stop both the tape and the slides, you push the pause button. Then we have any discussion necessary to answer the questions and, if needed, go back to a slide we need to look at again. If more information is desired, we refer to other reference materials. After notes are taken, students immediately complete the necessary work on the guide or work sheet.

This procedure works equally as well in the classroom as it does in the laboratory. It allows grouping of students so they may proceed at their own pace. It also allows individual students to catch up on work they missed because of absence or due to their being unable to keep up with the group.

• Maximum Learning

I feel that maximum learning takes place with this system because it:

—Provides a basis for a well organized presentation

—Makes it easy to present material in as much detail as you wish

—Provides a way for teaching a complete lesson, yet makes possible the use of other audio-visual aids, information, and demonstrations

—Gives the teacher time to think and discuss problems and help those who need it on an individual or group basis

—Helps pace teaching and learning

—Puts the responsibility on the student for increased learning

—Provides for group or individual instruction

—Provides for optimum learning by hearing, seeing, and doing

—Leaves the teacher with much more time to help students who need help

—Helps students develop abilities to become more attentive, follow directions better and, in turn, become more responsive

—Is a flexible method that can be brought up to date easily

VOCATIONAL AGRICULTURE FOR COLLEGE-BOUND STUDENTS

BRUCE W. EMANUEL
Agricultural and Technical College
Cobleskill, New York

Above-average students are being discriminated against in many high schools today. Because of the current emphasis on science and technology, students are restricted from following their desire to explore interests in a variety of fields in the misguided belief that they must take a maximum number of academic subjects in order to gain entrance to college.

This approach simply is not necessary. In part, the approach is fostered by the fact that programs with rigid curricula are the easiest to administer. However, this should not be the chief concern of the school. When more time and effort are devoted to individual advisement of students, the results show positive contributions to the value of the total school offerings. Forward-looking schools throughout the country are providing a flexible program which is geared to each student's individual needs, abilities, and interests.

Modern Programs

Those of us in agricultural education must take the lead in opening programs to students of all abilities. We must use the variety of means at our command to educate students, parents, guidance counselors, and administrators to the unusual opportunities for education, growth, and development which exist in a modern vocational agriculture program. It is important to note that no other vocational service can match vocational agriculture in the percentage of its high school graduates who pursue formal education beyond high school.

Bruce W. Emanuel

Bruce W. Emanuel, a former New York Teacher of Agriculture, teaches animal husbandry at the Agricultural and Technical College, Cobleskill, New York.

There is a broad misunderstanding of the role of vocational education among educators today. In some instances this misunderstanding is shared by educators in our own discipline. Whether because of unfavorable experiences or in some cases no experience at all, these people "just don't know" the contributions vocational education can make to the total educational development of students. The contention of general education versus vocational education continues, but it is unfortunate if the experienced teacher of agriculture lets his attitude and actions become permissive, and worse yet, if the neophyte agriculture teacher does not correctly identify his program.

Flexible Program

Vocational agriculture teachers often find themselves caught in a trap which they may have helped to build. It is assumed that vocational agriculture should be geared to the needs of the noncollege-bound and the nonacademically talented. We plan our programs and select students, pointing only to the development of skills which can be used immediately upon graduation from high school. This view permeates the whole structure of education and results in a stereotyped picture of vocational agriculture which is unnecessarily narrow in scope.

In modern terms, the word "vocational" should mean vocational after college as well as after high school. Many of the new positions available today are for persons with some kind of training after high school. We in vocational agriculture must keep in mind the role that can be played by education on all levels from elementary through secondary, post-high school, and the four-year college.

In some schools there exists a myth that it is impossible to schedule vocational agriculture courses into the program which a student must complete to gain entrance to college. The majority of colleges list as their maximum requirements three years of social studies, four years of English, one or two years of laboratory sciences, three years of math, and perhaps some language. This leaves three to five credits or more available for exploratory courses which should broaden the student's over-all perspective and help him to formulate his goals for a life-work. Colleges today are putting increasing emphasis on the applicant's general level of scholarship, his character and promise rather than the completion of specific subjects for entrance.

Many educators, and some vocational agriculture teachers among them, say that academically superior students should not be enrolled in high school vocational agriculture programs. The vocational agriculture program, more than many other fields of study, recognizes each student as an individual. The very flexibility of the curriculum enables the teacher to effectively incorporate work on a variety of levels and interests which broadens occupational aspirations and provides maximum opportunities for growth for the student.

Unique Programs

We must be vigorous in our efforts to point out the unique features of vocational education in agriculture. We must show and tell others that vocational agriculture has not been in the past, nor will it be in the future, limited to skill training. It excels in more meaningful opportunities for student and faculty interaction for relating theory to social practice and experience. We must stress the value of high school study of agriculture as preparation for further study of agriculture in post-secondary institutions, including colleges and universities.

Some of the facets of the vocational agriculture program that make particularly important contributions to the

(Continued on page 95)

Effective Teaching Results in a Useful Product

TALMADGE H. WIMER
Agriculture Occupations Teacher
Abington, Illinois


Talmadge H. Wimer

"I wish someone would tell me how to make welding more interesting—if only there was a product involved." I made these comments to my wife one evening as I walked to the trash burner with a waste basket of paper. I was glad it was Friday and had muttered to myself "T. G. I. F." when the bell dismissed my sophomore class who had laboriously struggled all week in a seemingly impossible attempt to learn to strike an arc and hold a bead.

I had planned the instruction in detail and was using every technique and instructional aid I could think of. Yet all my plans seemed to have gone amiss. Only two of the fourteen boys were making any progress and several were becoming so discouraged that they asked if we could go back to the classroom and study poultry!

As I walked slowly back to the house after setting the match to the trash, my wife remarked, "I'll tell you how to teach welding. The answer," she said, "is in your own yard. Have the students build a trash burner." I have used the trash burner method the past twelve years to teach the fundamentals of electric arc welding.

Planning

Each student has a plan, including dimensions and procedures to follow, that has been discussed and outlined before going to shop. It is necessary to remove the lid or top end of the drum. This is accomplished with the cold chisel and the correct method of holding and using the chisel is taught. The cold chisel is sharpened before starting so grinding and sharpening are taught.

After the lid end is removed, the drum is carried outside the shop and a small paper fire started inside the drum to burn out and remove any residues of oil and fumes. This is a must to insure safety. After the drum is burned out, any jagged edges left by the chisel are hammered down. Next the student uses chalk or a magic marker and draws the guidelines for the slots that will provide ventilation and draft.

With the welder set at 180 to 225 amperage for cutting, the student begins cutting and following the chalk lines. The high heat setting makes the arc easy to strike and with some practice the student is able to burn the first draft slot. I demonstrate the weaving motion and the student follows this procedure on the subsequent slots. The weave motion relieves tenseness and improves the ability to hold the arc. By the time the student has cut the slots in the side and end of the drum, he has developed some abilities on striking the arc, holding the arc, and following the line.

Welding

Next the welder is adjusted to about 100 amperes and the student begins to run practice beads in a downhand position on small scrap plate metal pieces. The weaving motion is still employed. Each student runs twelve or more acceptable beads. The next step is butt welding two pieces of scrap with a short two-inch bead. The weld is quenched in water and placed in the hydraulic press for the bending test. After the student has welded six scrap pieces that are bent into a "U" by the hydraulic press, he is ready to begin making the bases for the legs.

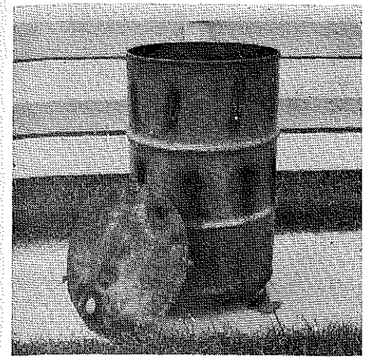
After the bases are prepared, the leg must be welded on using the fillet bead. For practice, the student welds several short legs to scrap and places them in a large vice for a bending test and quality bead.

Legs of proper length are next welded to the bases. The slotted drum is turned with the bottom up and the legs are held inside the bottom flange and welded in position. Three legs equally spaced around the bottom make a burner that sets well on all types of ground.

Results

By now the student can see the results of his efforts and a feeling of pride and accomplishment is exhibited. The slow learner in the classroom often is the first one to complete this much of the burner, and he is recognized by his peers as a "welder." This person has accomplished something for which he can be recognized. A teacher's objective has now been fulfilled — to teach boys to gain self-confidence and do something by themselves. I teach boys how to weld; I do not teach welding to boys.

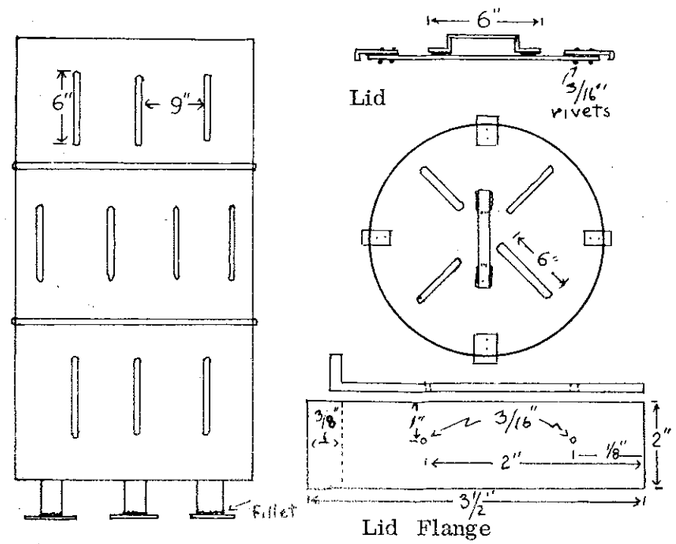
The end of the drum that was removed with the cold chisel is smoothed with a double cut file and again a new skill is introduced. The lid is a very light gage metal and this is an excellent opportunity to teach some sheet metal welding. At this point, the student checks reference materials on how to weld thin metals in regard to amperage setting, electrode size, and position of weld. The student then sets up the operation and begins to weld the flanges and handle to the drum lid. Usually the outcome is similar to the results that are predicted in the references, so students realize the value of checking on how to do an operation instead of using the trial and error method. Occasionally a student will not read at all and the results soon bring an awareness that directions are important and fundamental for success.


The product!

New Skills

The students have learned several new skills and abilities including the following: sharpening and using the cold chisel; filing on rough surfaces; reading a plan and laying out work; striking an arc and running beads; making butt, fillet, and lap joints; welding thin metals; recognizing a quality bead; and appreciating the skills needed by welders.

The complete project is a useful article and the students have developed pride in their work with the challenge offered by competing with their classmates. There is no romance in welding two pieces of metal together when the results are tossed into the scrap iron pile. I believe the secret in effectively teaching electric arc welding is to have a useful product as the result.



Materials needed for making the trash burner are: one used 20-, 35-, or 55-gallon oil drum; 14" x 1/16" x 2" sheet metal for lid flanges; 12" x 1/16" x 2" sheet metal for handle; 12" x 3/16" x 2" metal for legs; three 3/16" x 4" x 4" leg bases; and eight 3/16" or 1/4" round-head rivets.

Vocational Agriculture for College-Bound Students

(Continued from page 93)

development of all students are individualized instruction, learning through supervised practice and laboratory work, home visits, and a year-round program. We must promote vocational education in agriculture as it should be — education for all occupations in business, industry, and on the farm that involve knowledge and skills in agricultural subjects.

With this in mind, modern vocational agriculture programs should stress increasingly its contributions to the education of the above-average and superior student who may be considering a college education. Any young person with a farm background or a sincere interest in agriculture should be encouraged to follow this interest during his high school career.

College-Bound Students

We all recognize that job opportunities in agriculture are greater than ever before, particularly for the college-prepared. Many of our most valuable young agriculturists are being lost to other professions each year because they are encouraged during their high school years to concentrate on academic subjects to the exclusion of any possible work in vocational agriculture. Through vocational agriculture they can discover the broad scope of agriculture throughout the nation, its fundamental importance to our economy, and the implications of the rapid changes which modern technology is bringing. They can gain a sense of the excitement of work in an area which, in the case of rural youth particularly, they have known from their early childhood.

There will, of course, be scheduling and other problems involved in expanding the availability of vocational agriculture programs. Offering single-period courses to fit the crowded schedules of the honor students has helped to provide necessary flexibility.

Vocational agriculture teachers must take the lead in an aggressive fight against the stress on a strictly academic program for above-average students. Of primary importance in broadening the scope of vocational agriculture is an attitude by the vocational agriculture teacher toward the program. Once he is convinced of the unique contributions vocational agriculture can make to the development of all interested students, he can begin to work toward educating those involved in curriculum planning to take maximum advantage of the variety of opportunities offered. Faculty guidance resulting in overemphasis on academic subjects must be replaced by a more broadly based approach stemming from a genuine understanding of vocational programs and the valid contributions they can make to the education of college-bound youth.

Careers in Agriculture Via Television

MARTY THORNTON
Agricultural Occupations Teacher
New Lenox, Illinois

The TV program showed this student who is enrolled in the Agricultural Business Course.

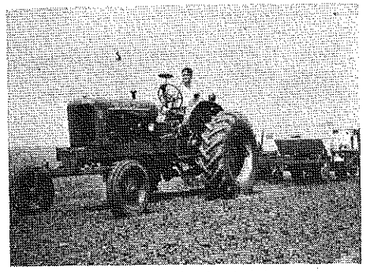
Marty Thornton

Have you ever seen a successful salesman who wasn't always telling someone about or showing them his product? I doubt it. Even though we hear that a good product will sell itself, I think you'll agree that it will sell better if we promote it.

Agricultural occupations programs are much like the salesman's product. If we exert only a little effort, mediocre results can be expected. On the other hand, if we exhibit initiative, enthusiasm, and innovative ideas, the programs can be exciting, very interesting, and in demand.

Growth

Agriculture is sold to students as a career choice at Lincoln-Way High School, New Lenox, Illinois, which is located about 45 miles southwest of Chicago. We had 1,450 students enrolled in the high school in 1969-70.



The use of the school's land laboratory was illustrated with picturos of students working and learning in the laboratory.

The projected enrollment for 1972 is 2,200 students. Students come from four surrounding towns, three of which are growing rapidly due to the addition of industry. The fourth town remains somewhat rural.

Enrollment in agriculture expanded rapidly also. There were 55 students studying agriculture in 1965. We had 250 students in agriculture in 1969-70. We anticipate about 300 students in 1970-71. The agricultural education program has grown in five years from a one-man department of 55 students to a 250-student, three-man department.

Think Big!

But why the growth? How can we sell students on the idea of a career in agriculture? My answer is THINK BIG! But then only thinking big won't assure success either, unless we do something with our big ideas.

More students and parents need to be reached with the story of the importance of agricultural occupations. In March 1969, we decided to make a concentrated effort to improve the image of agricultural occupations, not only at Lincoln-Way High School but in the surrounding communities.

We had already used several techniques to inform the community of career possibilities in agriculture. We used the newspapers, parent newsletters sent out by the administration, and brochures placed in local business to show that agriculture is more than farming. The brochure also described the fifteen courses in agriculture available for students in the areas of plants, animals, agricultural mechanics, and agricultural business.

Television

After considering the situation, we decided to investigate the possibility of a television program on careers in agriculture using slides of agricultural occupations students at Lincoln-Way High School.

I talked with Orion Samuelson, a former vocational agriculture student and FFA member who is Director of Farm Services for WGN-TV in Chicago, about the possibility of a "back-to-school" program showing agriculture careers. He was quite receptive to the idea. During the summer we began to organize slides of students employed in each of the various phases of agricultural occupations. With the help of the other agricultural occupations teachers, a script was prepared for the slides. The program was accepted by WGN.

The live presentation on WGN-TV's "Top of the Morning" show seemed to be just what the doctor ordered to help students become enthused about coming back to school and exploring a career in agriculture. Many students were elated because they had seen themselves on television. It removed doubts they may have had about the image of agriculture. It replaced these doubts with pride.

Television programs on careers in agriculture may be just what you need to give your program an extra boost. A dream can become a reality. Remember, you must take the initiative to prepare the program and you must contact the station. It takes time, but the results are gratifying. The result will be a better informed, more cooperative community.

T-Bone Corporation Aids in Teaching Animal Science

DAVID E. BURNS
Teacher of Agriculture
Almont, Michigan

David E. Burns

How do you teach animal husbandry to students enrolled in their first year of agriculture if the students live predominantly in town and, for the most part, have no intentions of farming? The students at Almont (Michigan) High School decided this task could best be accomplished by forming a livestock corporation. The class would buy feeder steers, raise them to market weight, and sell them at the 4-H livestock sale during the following summer.

After the students decided to develop a corporation, they were confronted with an array of questions: Where would they keep the steers? How would they raise money to buy the steers? How would ownership be handled? Who would choose the feeder steers to be purchased? Should the corporation buy steers or heifers? How many steers should be bought? What do you feed steers?

Solving Problems

Most of the students enrolled in Basic Agriculture did not know a heifer from a Hereford or a steer from a bull. Students who were familiar with farming were used to help those from town realize the priorities that should be placed on their concerns. The class decided rainy days should be spent developing the guidelines for the corporation and the nicer days should be used to learn how to judge feeder steers. The best livestock judges in the class would select the feeder calves.

The students decided they would need a source to finance the initial cost. The class considered two sources: the Almont FFA and the local bank. The class concluded the FFA might be convinced to loan the money on a profit-sharing agreement while the bank would probably insist on a specific interest rate. A committee was appointed to develop a proposal to be presented at the next FFA meeting to obtain financial backing. A motion to support the proposal was passed. All stock which was not purchased by students would be owned by the FFA.

T-Bone Corporation

The livestock judges from the class, accompanied by three farmers and the agriculture teacher, bought the steers on November 20. On November 25, the first stockmarket of the Almont T-Bone Corporation was held with shares available at one dollar, three dollars, and five dollars. Anyone in the Basic Agriculture class or in the FFA could buy shares, but only members of the Basic Agriculture class could vote on corporate decisions.

The elected Board of Directors for the Almont T-Bone Corporation were responsible for keeping records of all stock transactions. Every Monday, the Board of Directors prepared an Owner Summarization which was a breakdown of the corporation ownership from the previous week. On Tuesdays, the Board of Directors developed a Stockholders Report which listed the total consumed costs to date and the value of the shares for the stockmarkets that week. The stockmarkets were held during the first fifteen minutes of class on Wednesdays and Fridays. All stock transactions had to be made between FFA members and the Almont T-Bone Board of Directors. The corporation records would be considered valid in ownership disputes.

Instruction

As the value of stock increased, the students became concerned with the determinants of the stock value. The formula used in determing stock value is indicated in the accompanying box. When the class studied the formula they discovered they had no control over the value of the steers. The formula used an average daily weight gain, assuming the steers would each weigh 1000 pounds by market time.

(Continued on page 99)

Procedure for Calculating Share Value

Step 1:	Multiply 25.62 lbs. times the number of weeks the steers have been on feed.
Step 2:	Add the answer from Step 1 to 961 lbs. (initial weight).
Step 3:	Obtain the lowest price of choice steers from the Michigan Livestock Exchange Market Report.
Step 4:	Subtract the price found in Step 3 from 36c (initial price).
Step 5:	Divide 41 into the price determined in Step 4.
Step 6:	Multiply the answer found in Step 5 by the number of weeks on feed.
Step 7:	Subtract the result of Step 6 from 36c.
Step 8:	Multiply the price determined in Step 7 by the weight determined in Step 2.
Step 9:	Figure the consumed costs to date.
Step 10:	Divide consumed costs into the value of the steers to determine the value of the share.

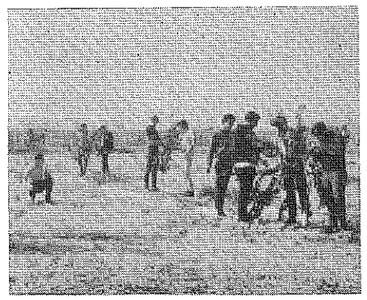
LABORATORY INSTEAD OF A FARM

ROBERT KNOWLES
Teacher of Agriculture
Kerman, California

To farm or not to farm, is that the question? It is a question that we at Kerman (California) Union High School asked ourselves more than once. We came up with some answers that may be of value to others.

In California we have some very large school farms, up to 180 acres or more, which often are expected to be operated as an economical unit and to show a profit. Most of these farms have a full-time manager. However, making a profit and training students are not always compatible. While this type of school farm may be good in theory, it is not always conducted in a manner which is in the best interest of the education of students we serve.

The smaller type farm of ten, fifteen or more acres presents different problems. It is too small to warrant the employment of a full-time manager. Consequently, the agriculture teacher turns out to be the manager, and he may spend a disproportionate amount of his time doing chores about the farm. I know there are teachers who enjoy this situation and would have it no other way. On the other hand, there are teachers who do not want a system of this sort. Because of the large amount of routine work which must be done and because the teacher doesn't have either enough time or volunteer help to do the work, he ends up spending far too much class time doing things which it may be difficult to justify as being educational.



Students shape trees in the orchard area of the laboratory after the first year of growth.

• Laboratory Instead of Farm

At Kerman Union High School we think we have overcome many of the drawbacks of the school farm and yet are able to provide the type of program enrichment which the best of school farms offer. We have done this by making our facility a "laboratory" instead of a "farm."

Let me go back to the beginning. About five years ago we were making preparations to build a new school. We thought there was a need for a school farm and felt it should be included in the new facility. With the aid of our advisory committee we made a thorough study of the various possibilities. The first thing we did was discard any thought of the large type of operation as not being practical for our purposes.

In order to gather ideas, the teachers and a group of advisory committee members visited a number of school farms. After completing the study we arrived at the conclusion that we would need about five acres. We then secured administrative and board approval for the inclusion of the farm in a convenient location on the new school site.

At this point a very fortunate (as it turned out) mistake occurred. In planning, the architect set aside a strip of land only 140′ x 800′, slightly less than two and one-half acres. This was only half of what we had estimated our need to be. When we discovered the error, it was too late to do anything about it. So we were confronted with what to do with this 140′ x 800′ strip of real estate.

After careful consideration, we found that this shape would lend itself very well to a scaled down version of our original plan. It was at this point that we began to realize that the mistake was a favor to us.

Robert Knowles

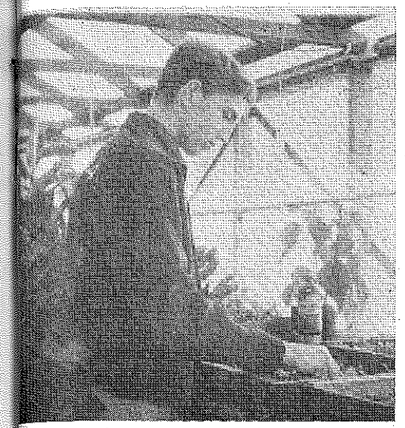
Robert Knowles, Teacher of Agriculture at Kerman (California) Union High School, also serves as Coordinator of Vocational Education and Work Experience Education for the school district.

What we wanted was an instructional facility providing for demonstrations, some experimentations, a limited amount of student practice of farming operations, and a place for students with inadequate opportunity at home to have some kind of project. We did not want a place for teachers to spend the weekends. We wanted a laboratory where a maximum amount of learning can take place with a minimum amount of time expended in menial tasks by teachers.

• Layout

We divided the laboratory into six areas or units: orchard, vineyard, livestock, field crops, truck crops, and nursery or ornamental.

The orchard unit is about three-eights of an acre and includes the commonly grown varieties of walnuts, almonds, apples, pears, peaches, apricots, plums and citrus. This unit has permanently installed sprinklers which are clock or manually operated. It also has facilities installed for furrow or flood irrigation. This makes it possible to demonstrate any type of irrigation but eliminates the need for routine irrigation.



This student's work center is a local super market where his work is supervised by the store owners.

The vineyard is another three-eights acre plot including in the permanent plantings about twenty of the commonly grown grape varieties. These include all three styles of grape prunning-head, cordon, and cane. In addition we have about half of the vineyard devoted to temporary plantings in which the students can witness all stages of development from planting to full production. When these vines reach full production (four years) they are removed to make way for the next temporary planting. This gives students an opportunity not only to see all stages of development at one time, but allows them to participate in all the development procedures during their four years of high school. The vineyard is set up for irrigation in the same way as the orchard.

The animal unit, which is still in the early stages of development, contains about three fourths of an acre. When completed it will provide facilities suitable for most types of student feeding projects. We do not plan to have any school or FFA owned animals unless a cooperative project may be carried out. Unfortunately this unit is slow in being developed because of the expense involved.

The one-half acre field crops area is presently being used with the truck crops area for a cooperative student project in sweet corn which the students plan to market through local stores and to individuals. We have both gated and sprinkler pipe for irrigation of these units, so we can again vary irrigation procedures. This area has been used for fertilizer test demonstrations and for growing corn.

The one-fourth acre truck crops unit is not now separated from the field crops unit. We do have tentative plans to use it for a winter garden as part of the curriculum in plant science. It is also available for student projects.

The one-eighth acre nursery unit has a small, student constructed green house fully equipped with thermostatically controlled heating and cooling and clock controlled mist and lighting systems. The students have also constructed concrete block soil bins, put in a large concrete slab for mixing soil, moved in an old building and remodeled it for use as a storage shed, constructed a simple shade area, and begun the development of a specimen group of ornamental plants. This area also includes a planting of trees which are used for practice in budding and grafting.

• Advantages

The total development of the laboratory is far from completed. However, we think we have come a long way in three years.

How much did all this cost? With the exception of furnishing the land and some of the tools, the district has used none of its funds for the development of the facility. The FFA has spent several hundred dollars, primarily toward the project facilities. Because of this and the work students have put into it, they are developing a great deal of pride in the laboratory.

With the willingness of the students to help themselves and because the laboratory is small thereby requiring only small quantities of each thing needed, we have had a great deal of help from individuals, organizations, and businesses in the community. All of the materials for the irrigation systems, and money for concrete, chemicals, fertilizer, implements, and other needed materials have been donated.

Being small has some other advantages. We are not particularly concerned with production per se. If a student makes a mistake, even a bad one such as running over a tree, we are only out the cost of a replacement. Also, we can demonstrate to students how an improper practice can adversely affect production.

When there are menial tasks to do they can be accomplished with the use of a very minimum amount of class time. They are a diversion, an experience, rather than a chore. In order to recognize donors, and incidently boost our public relations, we have built a very attractive sign to acknowledge their contributions and placed it in a prominent place in front of the school.

Besides the things already mentioned, the laboratory provides all the advantages of the usual school farm including a place to carry out farm mechanics exercises as well as to develop skills needed in agri-science.

T-Bone Corporation Aids in Teaching Animal Science

(Continued from page 97)

The price per pound was determined indirectly by the Michigan Livestock Exchange Market Report.

The students deduced their only control of the share value was through the manipulation of consumed costs. They found the largest consumed cost was feed. They became interested in the possibility of reducing the feed cost while simultaneously having the steers attain market weight by sale time. They were ready for instruction on "How Do You Determine What To Feed Steers?"

The Basic Agriculture class used most of the first semester developing the Almont T-Bone Corporation. Toward the end of the semester, the students studied the terminology, nutrition, and care of other types of livestock. The Board of Directors' Tuesday Stock Report, The Ownership Summarization Report, and the two weekly stockmarkets continued through the second semester.

The "corporation approach" to teaching animal husbandry to students who live in town is an enjoyable and workable solution to a problem confronting many agriculture teachers who believe students planning to engage in agribusiness need a background and understanding of production agriculture.

Resource Persons Aid in Teaching

BROWN DRAPER
Teacher of Agriculture
Hartsville, Tennessee

The use of resource personnel in teaching vocational agriculture is not new. As many persons have pointed out, personnel from non-school agencies when properly selected and used can make a significant contribution to the overall improvement of the program of vocational agriculture.

Some advantages in using resource persons are: the novelty of their presence stimulates student interest; they are specialists since the nature of their work requires it; school-community relations are fostered through working with non-school agencies; specialists assist teachers in keeping abreast of new developments in various fields; and teachers are assisted in guidance programs.

An Increasing Need

In light of recent changes in agriculture, the experience, training, and time that any one teacher can be expected to possess makes the use of resource people essential to a well rounded program. We have seen many jobs formerly done on the farm by the farmer and his family move off the farm to become farm related occupations. This change has caused production farming as well as work in the related occupations to become specialized and more competitive. In order to succeed in the new areas of agriculture, the worker must keep abreast with current information on developments related to all areas of his operation.

Without using resource people, the teacher is not able to offer all the help the worker or student needs because of the increasing amounts of information becoming available. In order to cope with the situation, the teacher must increase his use of resource personnel. He will be impressed by the number of people who are quailified and willing to hep. I use resource people in all areas of my teaching program.

Adult Education

Adult education is an important part of vocational agriculture. From year to year it becomes more difficult to provide instruction for specialized farmers and other workers in agriculture. We must be sure that we are meeting their needs if we are to compete with the other demands on their time.

We planned a cooperative Farm Management Course in our community for the first time in 1969-70. The course was cooperative in that it was planned and conducted by the agricultural agencies of the county and their advisory councils working with the credit agencies and representatives of the milk companies serving the area. By pooling our thinking, we were able to come up with a program based on the needs of the individuals attending as evidenced by an average attendance for the twelve meetings of 39 farmers and workers.

The meetings were held in the school's Vocational Agriculture Department with the main responsibility for the program resting on the Vocational Agriculture Teacher and the County Agricultural Agent. Resource people used in conducting the course were from the Extension Service, Farm Bureau, Soil Conservation Service, Agricultural Stabilization and Conservation Service, the Federal Land Bank, Production Credit Association, Farmers Home Administration, and personnel from local banks. From one to five specialists were used in conducting each class session.

Guidance

Resource personnel are used in our guidance program also. As we study the professional and occupational opportunities in agriculture, I bring in resource people employed in the occupations and professions studied. Some of the resource people used in the guidance program are representatives of the Tennessee Farmers Co-op, the Tennessee Farmers Mutual Insurance Company, the Tennessee Game and Fish Commission, the Production Credit Association, a major tobacco company, Soil Conservation Service, the Agriculture Economics Department of the Middle Tennessee State University, and a State Area Vocational Technical School.

Students received first-hand information from these people that will help them decide for or against the occupations studied. Student teachers from the Agricultural Education Department of The University of Tennessee play an important part in our guidance program.

Others

Soil Conservation Service personnel help with our land judging program and the use of the farm level. The County Agent responds to our requests for resource people from the Cooperative Extension Service. We feel that the use of resource personnel by teachers of vocational agriculture will better enable us to prepare young men for farming and work in related fields and give greater assistance to those now engaged in such occupations.

The videotape recorder is very helpful in preparing students for FFA contests.

A New Teaching Tool

WILLIAM HARRISON
Teacher of Vocational Agriculture
Caledonia, Michigan


William Harrison

Studying agriculture should be exciting and challenging. Instruction should be exciting enough to stimulate low-achieving students and challenging enough to dare the most intelligent students. The image of a vocational agriculture graduate should be a well rounded individual who is developed in poise and able for leadership.

Traditionally we have used textbooks, field trips, group projects, and other techniques to help achieve these outcomes. But how can we compete with moon walks, heart transplants, and similar events that confront our students everyday? How can we make vocational agriculture the most exciting and challenging course in the curriculum? One answer may be the videotape recorder.

Some Suggestions

The uses of the videotape recorder in teaching agriculture are many. Several ways in which we have used it are described briefly.

- The vidcotape recorder is perfect for collecting information about occupations in agriculture. We continually stress the carcer opportunities in agriculture. Students interview local agribusinessmen, using a portable videotape unit to record the interviews for later use in the classroom. The businessmen enjoy working with students and really go into detail during the interview in describing occupations.
- The videotape recorder is used to replace certain fieldtrips. By using the portable unit to record the scenes and events of some fieldtrips, the problems of time and weather are eliminated. When these tapes are played back in the classroom, every student has a front row seat.
- The videotape recorder is used extensively for practice and self-evaluation when students are preparing for leadership contests. When students can see themselves visually, they are encouraged to improve. In 1969, the Caledonia FFA won the State Public Speaking Contest, State Farm Forum Contest, and the State Parliamentary Procedure Contest. In 1970 we won the State Farm Forum Contest and the State Demonstration Contest.

These are but a few ways to use the videotape recorder as a teaching tool. By using futuristic teaching tools like the videotape recorder, we can make the study of agriculture both exciting and challenging.

Teaching Agriculture from the Air

CLYDE B. RAY
Teacher of Vocational Agriculture
Charlotte, Michigan

In 1968 and again this year, the junior and senior vocational agriculture students at Charlotte (Michigan) High School studied Farm Management, Farm Woodlot Management, and Soil Conservation. After studying these units in the classroom, the FFA chartered a plane from the local airport so students could view their farms from the air.

Students see the layout of fields, tile lines, open drainage ditches, stone piles, and wooded areas much more clearly than is possible to imagine from the ground. They are surprised to see the variation in the density of crop growth, the difference in soil color, and the relationship of their farm to neighboring farms. Also, the need for a good clean-up of the farmstead is evident to some.

After the aerial view of their farms, we go back to the classroom for additional study and the completion of management plans. Students take many ideas home to use on their home farms. Today many of the farms that were studied from the air have instituted the improvements that were planned.

BOOK REVIEWS

GERALD R. FULLER, Special Editor
University of Vermont

AGRICULTURAL EDUCATION: IMAGE AND SUBSTANCE by W. Howard Martin. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1969, 12 pp. $1.00.

Dr. W. Howard Martin is a professor in The Department of Higher, Technical and Adult Education at the University of Connecticut. This publication is the lecture given by Dr. Martin at the annual meeting of the American Association of Teacher Educators in Agriculture at the 1969 AVA convention in Boston.

Agricultural Education: Image and Substance contains a significant challenge to agricultural educators. Dr. Martin has proposed that a National Commission on Agricultural Education be established to rethink the goals for agricultural education. He suggested four goal areas for positive image building and around which desired unity may develop in the new programs: agricultural production and marketing; natural resource management; environmental development, and agricultural research and service.

During the past 10 to 15 years much has been said and written regarding the need to redirect programs of vocational education in agriculture. Agricultural educators have moved through the maze of defensive arguments and have in fact established an identity with programs to prepare youth for "agricultural occupations including farming." However, as Martin noted there is still a major image problem. He put it quite boldly by suggesting we ought to be able to go beyond the broadly stated goal: "to develop agricultural competencies needed by individuals engaged in or preparing to engage in an agricultural occupation." Martin rejects the image construction since 1963 as being "too centered on needs of industry and too programmed by Big Brother."

Martin suggests the basis for program development ought to have direct experience by the student as a central feature. He suggests continuation of those approaches which recognize that individuals have different learning styles; he emphasizes the interpretative aspects of direct experiencing by students; and he stresses preparation for work rather than preparation for jobs.

This is a stimulating treatment of a topic which deserves immediate attention by all who are concerned with agricultural education. This publication should serve as an effective reference to those who want to consider issues such as should vocational education in agriculture be general or specific or should vocational education in agriculture be based on career choices by youth or should the program include instruction designed to enhance career planning and development. *Agricultural Education: Image and Substance* deserves to be read and discussed by many. It is most appropriate for graduate students, teachers, and other leaders in agricultural education.

O. Donald Meaders
Michigan State University

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AGDEX by Howard L. Miller and Ralph J. Woodin. Washington, D.C.: The American Vocational Association, Inc., 1969 edition, $4.00. (Quantity discounts available)

AGDEX is a system for classifying, indexing, and filing agricultural publications. It was first published in 1959 as a result of research conducted at Ohio State University. Its development was the result of a need to improve communication through uniform coding and filing of agricultural publications on a nationwide basis.

While several additions and improvements have been made in the 1969 edition, the basic design of the AGDEX system has not changed. It was originally designed as a comprehensive numerical system of classifying agricultural publications and for providing an easy, efficient filing system. Teachers of vocational agriculture and county extension agents will find this system particularly helpful in handling the wide range of publications they use.

The system includes a 50-page, spiral bound filing guide and nearly 1200 gummed labels which are color coded to aid in memorizing the system and in locating materials. AGDEX provides for classifying and filing all types of agricultural materials under many headings. Although the bulk of the system provides for publications on technical agriculture, it also accommodates material on agricultural occupations and on professional information. Many publications are being precoded, so they can be immediately placed in the appropriate section of the file. The time required for installation is generally three to five days.

Donald C. Burgett
Cornell University

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NORTH AMERICAN TREES by Richard J. Preston, Jr. Ames, Iowa: Iowa State University Press (Second Edition), 1961, 395 pp. $4.50.

Anyone interested in knowing how to identify native trees will find the ninth printing (1969) of this manual understandable and easily used. *North American Trees* has been designed to meet the needs of an interested nontechnical public, as well as for students and scientists. Terminology has been kept as simple as possible without sacrificing scientific accuracy.

Drawings showing descriptive characters, distribution maps, and concise descriptions of botanical and silvical characters have been included for 232 species of trees which are either of importance or general interest. An additional 336 less important species are either briefly described or included in the complete keys.

Guy E. Timmons
Michigan State University

FARM POWER AND MACHINERY MANAGEMENT by Donnell Hunt. Ames, Iowa: Iowa State University Press (Fifth Edition), 1968, 292 pp. $5.95.

The objectives of this laboratory manual and workbook are to examine in detail the various aspects of farm machinery operations and to indicate procedures for making economic decisions regarding machinery management. Equipment associated with crop production is discussed although the management principles are also applicable to livestock equipment.

This fifth edition of *Farm Power and Machinery Management* incorporates changes from previous editions. It includes new materials on implement monitoring, implement tire loadings, hydrostatic drives, and selection of the optimum farm power level by computer. New illustrations are used to show the latest farm equipment and new laboratory exercises are included.

The subject matter is of direct value to the present or potential operator or farm manager. However, the management principles and the machinery operating details should be useful to those students preparing for careers in agricultural education, agricultural mechanization or agricultural business, and to the agricultural engineer who might serve as a machinery manager on a large, commercial farm.

Guy E. Timmons
Michigan State University

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From the Book Review Editor's Desk

HELPS IN MASTERING PARLIAMENTARY PROCEDURE by Wilbur F. Stewart. New Concord, Ohio: The Co-Op Printshop, Revised Edition, 1969, 27 pp. 20 cents.

This is an updated edition of a publication of which over one million copies have been sold. Any person who is interested in parliamentary procedure will find this pamphlet well worth 20 cents.

1968 YEARBOOK OF FOREST PRODUCTS. Food and Agricultural Organization of the United Nations. New York, New York: UNIPUB, Inc., 1968, 157 pp. $4.00.

This twenty-second yearbook contains statistics from 180 countries, presented in three languages. The publication is a rather technical statistical report. It does provide an insight into the worldwide forestry industry.

News and Views of NVATA

JAMES WALL
Executive Secretary

The data on enrollment trends in agricultural education in the United States (see the tables below) have recently been released by the U.S. Office of Education. These data should be valuable in pointing out that vocational agriculture is changing.

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NVATA was represented during July and August at the following activities by the persons indicated.

—Region V Leadership Conference, Athens, Georgia: Millard Gundlach and D. P. Whitten

—Minnesota State Conference: Millard Gundlach

—New Jersey State Conference: Howard Teal

—Virginia State Conference: Howard Teal

—Agricultural tour of Europe sponsored by Geigy Chemical: Millard Gundlach

—National FFA Board of Directors, Washington, D.C.: Glen McDowell

—Reception and luncheon for Secretary of Agriculture Clifford Hardin, Kansas City, Kansas: James Wall

—Executive Committee meeting, Agricultural Hall of Fame, Kansas City, Mo.: James Wall

—National Convention, National County Agricultural Agents, Corvallis, Oregon: Millard Gundlach

—American Institute of Cooperation, Columbus, Ohio: James Wall

—Kentucky State Conference: Millard Gundlach

—Region VI Leadership Conference, Morgantown, West Virginia: Howard Teal and James Wall

Enrollment in Agriculture, United States 1960-1969

Level of Instruction	Number Enrolled				
	1960	1965	1967	1968	1969
Secondary	462,756	517,700	509,000	528,000	536,039
Post-Secondary	——	2,000	8,000	11,000	15,816
Adult	342,566	367,000	413,000	305,000	290,336
Special Needs	——	1,300	17,000[a]	20,000[a]	35,729[a]
TOTAL	805,322	888,000	935,000	851,000	850,705

[a]12,000 of the special needs enrollment was included in the secondary enrollment in 1967, 13,000 in 1968, and 27,215 in 1969.

Enrollment Trends in Agricultural Business and Agricultural Production, United States 1965-1969

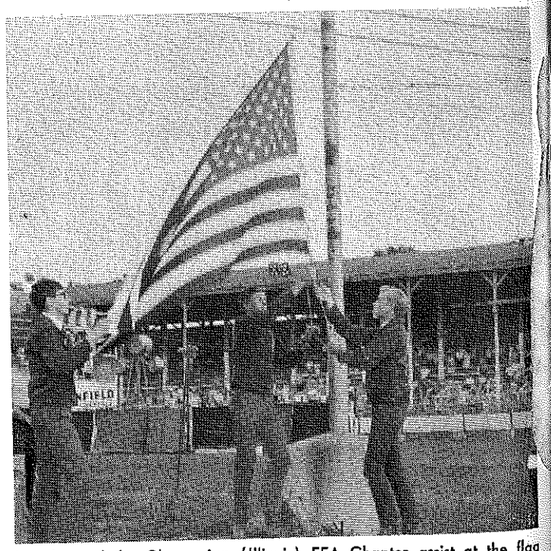
Type of Program	Number Enrolled			
	1965	1967	1968	1969
Agricultural Business	55,500	105,400	139,600	161,788
Agricultural Production	461,500	403,600	388,400	374,566
TOTAL	517,000	509,000	528,000	536,354

Stories in Pictures

ROBERT W. WALKER
University of Illinois

Students at Oskaloosa (Iowa) Senior High School study soils on land rented from the Chamber of Commerce. Soil profiles are taken back to the classroom so students can identify soils and plan fertilizer practices. (Photo by John Pothoven, Teacher of Agriculture, Oskaloosa, Iowa)

L. W. Davis, Consultant, Allis-Chalmers, Milwaukee, Wisconsin, served as a guest speaker at a symposium on nonfarm agricultural occupations held at Montana State University. The symposium was sponsored by the Montana State Collegiate FFA Chapter. Mr. Davis is a trustee of the National FFA Foundation. (Photo by Douglas D. Bishop, Montana State University)



Members of the Champaign (Illinois) FFA Chapter assist at the flag lowering ceremony at the county fair. The FFA Chapter also sponsored a youth tent at the fair to explain career opportunities in agriculture. (Photo by Roger Francis, Agricultural Occupations Instructor, Champaign High School)

Maynard Swanson

Agricultural Education

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Featuring —

RESEARCH IN AGRICULTURAL EDUCATION