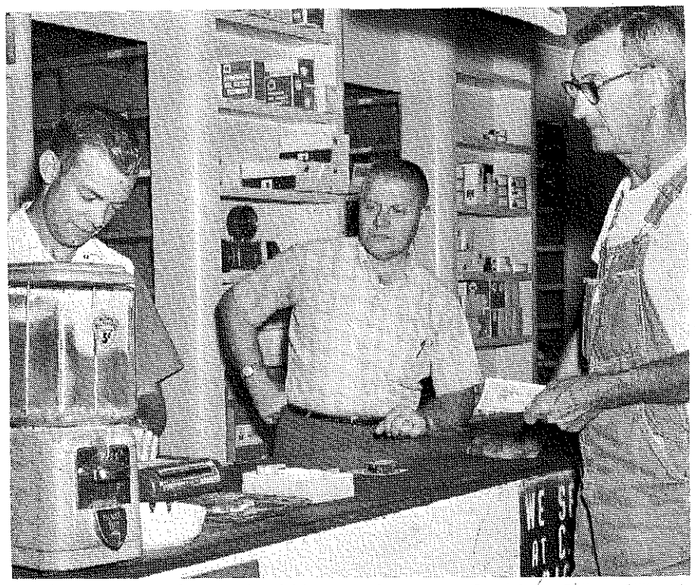
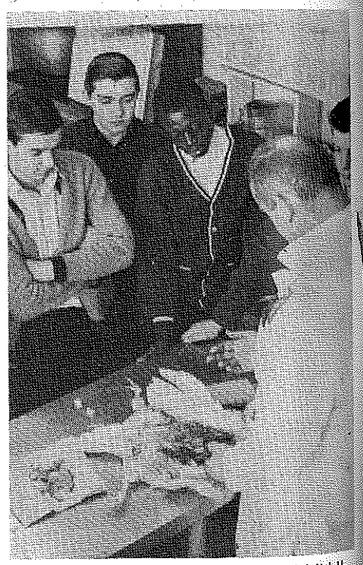
Cliff Lee, vocational agriculture student in Winter Haven, Florida, receives instructions from his employer-supervisor in an agricultural insurance business. (Photo by L. W. Harrell, Florida Department of Education)

Stories in Pictures

GILBERT S. GUILER
Ohio State University



Ardell Kimmel (center), Agricultural Mechanics Instructor at Rend Lake College (Illinois), observes the partsman in an agricultural equipment dealership prepare a sales ticket. This is one of the many operations of the business firm observed by Mr. Kimmel during a structured occupational internship in the summer of 1968. (Photo by Thomas Stitt, Southern Illinois University)



Roger Lawrence (right), Supervisor of Middletown, Connecticut, explains the digestive system of a fowl to a group of students. (Photo by L. L. Turner, Connecticut)

AGRICULTURAL EDUCATION

Agricultural Education

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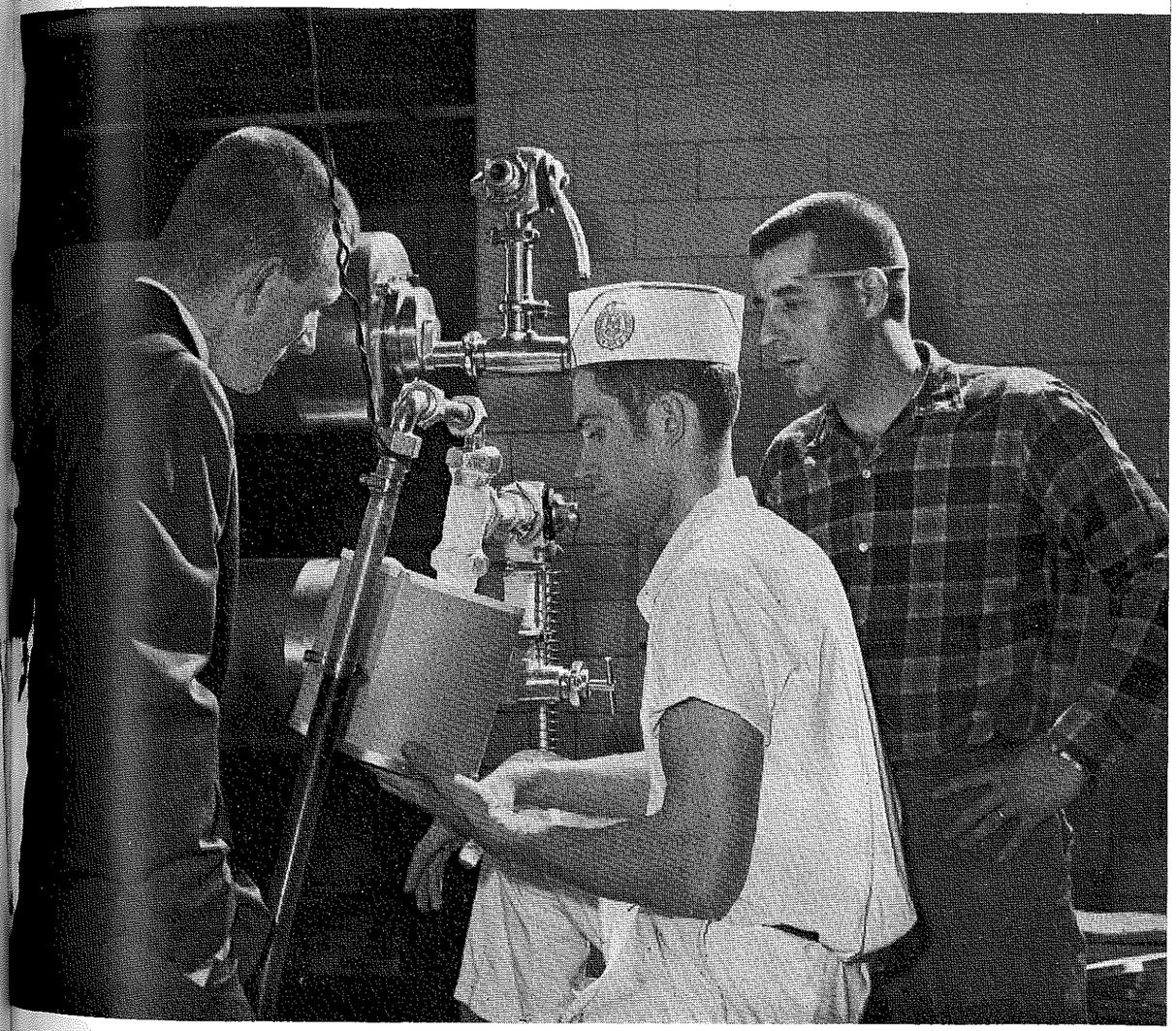

Featuring —

SUPERVISED OCCUPATIONAL EXPERIENCE

THE
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MAGAZINE
Vol. 41 December, 1968 No. 6

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Editorials

From the Editor . . .

Supervised Experience: Its Place in Learning


J. Robert Warmbrod

Supervised occupational experience from the beginning has been an integral part of the teaching-learning process in vocational education in agriculture. Supervised practice on a school farm during the early days of vocational agriculture, later home projects completed by students, then complete supervised farming programs or placement for farm experience, and now employment experience in non-farm business and industry describe our attempts to implement the concept of learning by doing.

We must constantly be alert to insure that supervised occupational experience is an integral part of teaching and learning. The concept of supervised experience implies much more than the point of view sometimes held that the primary value of experience is to allow students to apply what has been taught in the classroom. The contribution of supervised occupational experience to career exploration and occupational choice should not be overlooked or minimized. For many students supervised occupational experience serves primarily as a means of motivation since experience helps students see the need for and relevance of instruction and helps them identify problems and questions that they desire to study. Laboratory and farm experiences should be used more extensively for experimentation and as a means of arriving at and testing solutions to problems rather than limited exclusively to applying what has been taught. Occupational experience must be accompanied by instruction both at school and at the place where experience is gained. Also essential is supervision at the place where experience is gained whether on a farm, at a school laboratory, or at a business. There must be interrelationships among instruction, experience, and supervision; each must be related to and contribute to the other.

The primary criterion in selecting and planning appropriate supervised experience programs is: Will the experience contribute to desirable educational outcomes? Some-

(Continued on next page)

Guest Editorial . . .

The Need for Supervised Occupational Experience


Carl M. Humphrey

"The Vocational Education Act of 1963 eliminates the farming program requirement for enrollment in vocational agriculture. Anyone can now enroll." How many times have you heard this statement in the last five years? The statement is true in part, but too many times it has been interpreted to mean that supervised occupational experience programs are not required. Let us forget the word "required" and think about the need or necessity of supervised occupational experience to the successful preparation of individuals for employment in agricultural occupations.

For more than forty years, teachers, teacher educators, and supervisors have planned supervised programs to develop proficiency in production agriculture. With the advent of the 1963 Act, a new responsibility had to be assumed by vocational agriculture. It is now necessary to plan for supervised activities in many different and difficult situations.

We must proceed on the premise that farming or production is the basic segment of all agriculture with processing, marketing, and service occupations growing out of it. Agriculture must be considered as a group of occupations broadly categorized as production, marketing, processing, and service occupations. It is necessary, therefore, to provide supervised occupational experience in situations which provide the learner with experiences necessary for him to perform successfully in an agricultural occupation included within his vocational objective. If current and future evaluations of vocational programs will be based upon how well those people perform, effective supervised occupational experience programs are a must.

The supervised occupational experience program must be well planned. Planning involves the student, parents, the employer if one is involved and the instructor. Planning for supervised farming programs and other types of occupational experience programs vary so greatly they cannot be effectively discussed together.

(Continued on next page)

Carl M. Humphrey is Director, Agricultural Education, State Department of Education, Jefferson City, Missouri.

From the Editor . . .

times our use of supervised experience in vocational agriculture, particularly our use of farming programs, is vulnerable to criticism. There have been instances where experience, independent of instruction or supervision, has been emphasized primarily for meeting an administrative requirement for enrollment in a vocational course. In some cases the lack of facilities or opportunity for experience at home has been used as a device for screening students who are allowed to enroll in vocational agriculture. Though not to be overlooked for their motivational value, over emphasis on ownership of projects by students, primary attention to income from experience programs, and standards encouraging large scope and size of experience programs contribute to a situation where experience programs are considered more as ends to be sought rather than means of enhancing learning. Award programs that seemingly emphasize growth, size, and earnings from supervised experience rather than learning outcomes contribute to this misinterpretation of the major purpose of supervised experience as a part of an educational program.

As we take a new look at supervised occupational experience, there are some important matters that we must consider and study. First is the realization that supervised experience on a farm is not possible or appropriate for all students enrolled in a high school vocational course in agriculture. Appropriate laboratory and other types of supervised experiences should accompany introductory courses where the basic principles of crop and soil science, animal science, agricultural mechanics, economics, and leadership are taught. It does not necessarily follow that for all students these experiences must be gained on a farm.

Second, the school must assume major responsibility for insuring that appropriate supervised experience is gained by students. If we accept supervised experience as an integral part of teaching and learning in agricultural education, enrollmen cannot be made contingent upon the student having facilities or opportunity for supervised experience at home. Neither can enrollment be made contingent upon the student securing for himself acceptable employment on a farm or in a business. Schools must provide appropriate laboratory facilities and take the initiative in selecting appropriate cooperating employers when self-employment and home-based experiences are not warranted or possible. Schools must make available sheltered and simulated experiences for students enrolled in educational programs for the disadvantaged.

A third concern involves the development of occupational experience programs in non-farm businesses where knowledge and skill in agriculture are involved. In vocational education this type of supervised occupational experience is commonly referred to as cooperative education. In some states policy requires that cooperative education be operated in accordance with standards and requirements that are common to all vocational services. For example, common standards for length of programs, number of hours of experience per week, and number of hours of school-released time for occupational experience are proposed whether students are enrolled in agricultural education, business education, industrial education, or any other area of vocational education. All vocational services should be free to develop occupational experience programs that meet the unique needs of their students and the industry they serve. There is nothing sacred and little that is educationally sound about all vocational services doing everything alike when it comes to cooperative education. A case in point is the Cornell University research reported in this issue that casts doubt on the desirability of some of the customary and rigid requirements for supervised occupational experience.

We must be especially aware of the possible misuse and misinterpretation of supervised occupational experience as we expand and improve present programs and develop new programs in agricultural education. As we develop and plan supervised experience programs, we must continually ask this question: Do these supervised experiences contribute to desirable learning outcomes? —JRW

Guest Editorial . . .

Most vocational curriculums in secondary schools consist of two years of agricultural science which provides the basic knowledge necessary to meet the needs of any occupation which can realistically be classified as an agricultural occupation. By agricultural occupation I mean any occupation requiring a basic knowledge of plant science, animal science, agricultural mechanics, farm management, or agricultural leadership. The supervised occupational experience program should be of such nature to enrich the classroom instruction by providing the student an opportunity to put into practice what he learns in the classroom. Therefore, this part of the occupational experience program should be in the field of production agriculture.

The third and fourth years of instruction should allow for specialization in areas specifically related to the student's vocational objective. Supervised occupational experience for these years should continue the production enterprises and provide opportunity to develop a supervised occupational experience program in the student's area of specialization.

The size of the local community will determine the number of opportunities which are available where students can secure occupational experience in off-farm agricultural occupations. Many schools furnish school facilities to provide supervised occupational experience. Many of these facilities are excellent. The facilities need to be adequate and the program needs to be well planned and effectively supervised. Probably the most difficult problem of using school facilities for occupational experience is providing "real life" situations. Developing skills in agricultural mechanics at school can be very effective, but the working conditions and the responsibility of the individual are quite different than when actually working as an employee in a farm machinery dealership. No substitute is as good as the real situation. There is no substitute for effective supervised occupational experience.

THE COVER PICTURE

Richard Bawden (left), Teacher of Agriculture at E. O. Smith High School, Storrs, Connecticut, supervises Ronald Kovanovics, a former vocational agriculture student. George Norman (right), University of Connecticut Dairy Plant Manager, is the cooperating supervisor. (Photo supplied by Llewellyn L. Turner, State Department of Education, Hartford, Connecticut)

Harold R. Binkley

Experience Programs — *A Must in Vocational Agriculture*

HAROLD R. BINKLEY, Teacher Education
University of Kentucky

Over the years we have used the terms "supervised practice" and "supervised farming" in talking and writing about farming programs. More recently we have used the terms "experience programs," "agricultural experience," and "occupational experience." Perhaps we have reached agreement in the use of terms when referring to the experience programs in vocational agriculture.

I suggest that we use the word "experience" instead of "practice" though the two words do not mean quite the same thing. Falling out of a tree and knocking the breath out of myself for a full minute was a vivid experience, but it was not practice. In agricultural education we have thought of desirable practice as resulting in improvement with each performance. How does the expression "experience" sound to you? "Experience programs" is perhaps a good expression whatever form of agriculture it may be—farming, sales and service, horticulture, or agricultural mechanics.

Basic Philosophy

The basic philosophy of vocational education in agriculture is sound — class instruction with experience programs in agriculture. This must be kept clearly in mind to improve present programs and in developing new programs. Unless we do some clear thinking and recommit ourselves to this philosophy much of the gain of half a century in vocational agriculture may be lost. The basic philosophy of vocational agriculture has been largely responsible for the success of its programs. The need for farmer training has been, is, and will be for years to come important and vital. In many communities it should probably continue to receive the main emphasis in vocational agriculture; however, there is a need for expansion of the total program to provide class instruction and experience programs in other agricultural occupations.

The pattern of instruction in vocational agriculture is class instruction and supervised experience. Pressure will be brought by administrators, other teachers, and lay people to place less emphasis on experience programs in agriculture. The leadership in vocational agriculture must be alert; they must accept the challenge of keeping theory and practice together. This will be the greatest challenge in the future.

Planning Programs of Occupational Experience

Conceiving new programs and being concerned with improving old programs are fundamental and basic to planning. Someone conceived that a man could be sent to the moon and back. Then planning started. And, so it is with programs in vocational agriculture. What are the steps that should be taken in planning programs?

First determine the competencies needed for successful employment in various agricultural occupations or clusters of occupations. Thinking should not be limited to the competencies in vocational and technical skills but should include how to get along with people, being a good citizen, and how to find joy and happiness in one's vocation. How to determine the competencies? Go to the employers and ask them what the competencies are. The competencies needed for successful employment in many businesses and industries in a locality or state are basic to conceiving and planning a program. Research for the purpose of program development is necessary. In many cases the competencies needed for several vocations are the same as those needed for successful employment in almost any vocation. So these competencies are already known.

Second, determine the opportunities that exist or can be provided by the school or otherwise for experience programs. In other words, what are the resources in the community or that can be provided by the school around which experience programs in agriculture can be developed?

Third, there must be an affirmative answer to this question: Is there a real need for the program which has been conceived? If there is a real need, move forward. If there is not a real need or the need is questionable, it is wise to stop.

These three steps require careful and thoughtful study to get the facts needed in arriving at a sound decision. Teachers do not have to embark with no charts or plans.

Involvement of People

Formal arrangements whereby youth learn from people successfully engaged in occupations have been used throughout the recorded history. Such arrangements are an important part of occupational education. The Vocational Education Act of 1963 focuses the attention of educators on cooperative arrangements for education. Cooperative education is a joint effort in which the school works in cooperation with some person or agency capable of providing experiences which the school alone cannot provide. This is not new. Cooperative educational programs with the parents of students in vocational agriculture have been present from

(Continued on next page)

Experience Programs — A Must in Vocational Agriculture

(Continued from page 129)

the beginning. Farming programs and placement for farm experience have been and are still cooperative education.

Cooperation of people in agriculture is a necessity if experience programs in agriculture are to be developed. The necessity for working closely with the employers who are to provide the experience has become abundantly clear. They need to understand what is involved in the program. They should help the teacher develop the program. The cooperator should be consulted on what he is concerned about—what he wants the employee to have in the way of competencies, knowledge, and work habits. The teacher should make clear how the instructional program at school will relate to what the student will be doing in the business. Involvement of cooperators makes it their program, and they will develop a concern for providing a good experience program and will accept responsibility for many aspects of supervision.

The better cooperators understand what the teacher is trying to do and why, the more cooperation the teacher will have. Cooperation depends heavily on understanding.

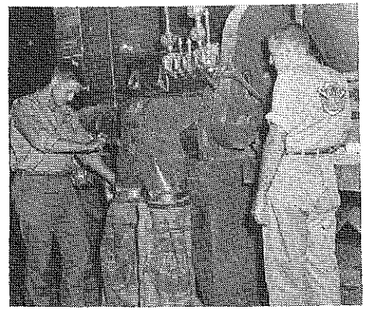
Training Plans

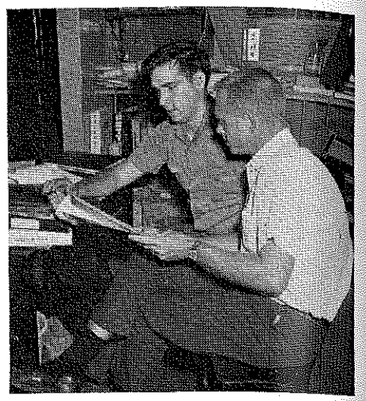
Plans for experience programs in agriculture are necessary just as plans for farm experience programs are necessary to insure good training in farming. Each student placed for occupational experience should have a plan for his experience. The plan should be written. The experiences to include in the plan should be selected jointly by the student, the teacher, and the cooperator.

The experiences should be listed in the order in which they are to be obtained, because certain experiences are prerequisities for others and some are more difficult. Experiences should be a sequence so that the student can succeed. Early success is important in learning. Involvement of the student in developing the experience program helps him think seriously about his responsibilities and the competencies he must develop to attain his occupational objective. Through joint development

(Below)

Occupational experience in a feed mill is supervised by an experienced employee in the business.





(Above)

The teacher of agriculture works with the owner-operator of an agricultural supply business in developing a plan for the student's experience program.

of the training plan the employer becomes more keenly aware of the occupational objective of the student and the necessity for providing appropriate activities, on-the-job instruction, and supervision.

Importance of Supervision

The importance of supervision to the success of farming programs has long been recognized. The primary purpose of supervision is to improve the instructional program, to insure that students get experiences of the right kind, and to insure that desirable learning results.

A person in the agricultural business must be designated as a training supervisor. The agriculture teacher must spend adequate time in supervising the students. Supervision should be by the person responsible for the class instruction. Close supervision is especially important during the early experience because the employer is forming an opinion of the teacher, the program, and the work of the student. The student must succeed for failure may be quite different from what happens when a student fails with a farming program. On the farm the teacher, student, and parents keep to themselves a failure. Good supervision from the start will help assure success, will help develop confidence, and will aid the student in solving problems. Employers expect teacher supervision to improve students.

Teachers must keep their relation to the employers on a business and professional basis. Becoming too familiar tends to cause a relaxed and an uneducational atmosphere for the best training situation. The teacher should observe the student in the performance of his duties but should not interfere with his work. He should make notes for use during a conference with the student at school regarding his performance.

The Challenge Ahead

Intention to develop quality experience programs in agriculture must be intense enough to pay the price in study, hard work, and devotion. Just because one was a good teacher in a given program yesterday does not necessarily mean that he will be a good teacher for the same program or a different program today or a year from now. There is no such thing as standing still; programs either move forward or retrogress.

Dedication, determination, and enthusiasm will enable teachers to develop the kinds of programs in vocational agriculture they should have. Dedication, determination, and enthusiasm are characteristics of aggressive action which must prevail if agricultural education is to meet its responsibilities in having experience programs which will develop the competencies needed for successful employment in the many fields of agriculture.

SUPERVISED AGRICULTURAL EXPERIENCE PROGRAMS IN JUNIOR COLLEGES

KERN DOERNER and MARK KERN
Wabash Valley College
Mt. Carmel, Illinois

Agricultural educators have long recognized the value of adequate occupational experiences. The ideal way to attain these experiences necessary for job competence is to supplement classroom instruction with on-job training in an agricultural firm. Occupational experiences enable students to develop personal initiative, responsibility, and confidence as they work in realistic situations. The students recognize the importance of developing desirable attitudes, skills, and competencies necessary for success.

Placement

Students must meet certain standards before being placed in employment situations outside the classroom. Actually student-trainees are also ambassadors for the school, so it can be readily seen that the students must be aware of the importance of developing traits which are essential for employment. Above all the students must be honest and dependable. These points are in addition to their having successfully completed a core of courses aimed at whatever type business they plan to enter with the attainment of acceptable academic standards.

The training station must meet certain criteria. There must be adequate facilities; interested, competent personnel who have a sound understanding of the educational objectives of the program must be available to supervise trainees; time for the personnel to provide competent instruction must be available; and above all else the personnel must be of impeccable moral character.

Training Plan

An integral part of any supervised agricultural experience program is the training plan. This plan should be developed for each type of business. The plan should consist of a list of structured activities in which each student should participate and should identify at approximately what stage of the training period each experience should occur. Employers must be made aware of the value of starting the students on simple duties and progressing them to more complex responsibilities as the training period progresses. These training plans must be concise and to the point. The employer does not have time to acquaint himself with a long complicated list of activities.

Supervision

An essential part of the program is the actual supervision by college personnel. Visits are planned by college personnel so that students can be observed in an actual work experience situation. On each supervisory visit the students are given an opportunity to voice any questions or concerns which might be hindering their learning activities. About mid-way during the training period a conference is held with the student, trainer, employer, and college supervisor. This can be used as an evaluation and to redefine aims and objectives and make any alternations necessary in the training plan. The students are encouraged to participate actively in the discussions concerning their training.

Seminars are conducted while students are on-the-job to help coordinate the training. These are small group seminars with usually no more than twelve students per group. With groups this size student participation is assured. Any problems which might arise can be discussed by the group and possible solutions obtained. One seminar is held during the latter part of the training period and the trainers and employers are invited. This meeting helps the employers and students to better understand each other and leads to more meaningful training.

Conclusion

It is the responsibility of the employer to help provide meaningful experiences and on-job instruction directly related to classroom instruction. But to be successful in all respects, the students must be compatable to the training stations, the training plans must be wisely planned and executed, and supervision by college personnel must be wisely administered.

Kern Doerner

Kern Doerner is Coordinator of the Agricultural Business program at Wabash Valley College, Mt. Carmel, Illinois. Mark Kern, a member of the staff at Wabash Valley College during 1967-68, is currently a member of the staff at Rend Lake College, Mt. Vernon, Illinois.

Mark Kern

Guidelines for Successful Supervised Occupational Experience Programs

NORMAN K. HOOVER, Teacher Education
The Pennsylvania State University


Norman K. Hoover

A recent survey of high school agricultural programs in Pennsylvania during 1967-68 shows that 124 of the 217 schools reporting had 591 students, an average of 4.7 students per school, placed in off-farm agricultural businesses. An additional 719 non-farm boys in 156 schools, an average of 4.6 students per school, were placed on farms for supervised occupational experience.

Supervised occupational experience in agricultural businesses or on farms was made possible for these 1,310 students in a variety of ways. Flexibility in the statewide program provides for the needs of individual students, for differences in the agricultural economy of local areas, and for differences in philosophy of local schools.

RELEASED TIME FOR OCCUPATIONAL EXPERIENCE

Thirty-four of the 124 schools used released school time for supervised occupational experience. Where this plan is used, the usual procedure is to have an entire class of students scheduled for occupational experience during a six-week grading period. The released time from school involves a double period of agricultural class time so the teacher is free for supervision of students while they are on the job. In this kind of program students obtain approximately 100 hours of experience. The following factors must be considered if released time is to be used.

—There must be a concentration of businesses near the school; otherwise, too much time is used in getting from school to the place of work.

—Students should work for a minimum of three hours per day; therefore, scheduling of classes may be somewhat difficult.

—All students obtain the experience whether they want to work in an agricultural business or on a farm. This provides for exploratory work experience.

—The teacher can concentrate on the program over a relatively short period of time.

OCCUPATIONAL EXPERIENCE PARALLELS FARMING PROGRAMS

Many teachers conduct the supervised occupational experience program as a parallel to the traditional supervised farming program. That is, students work in an agricultural business or on a farm for a part of the year or throughout the year after school, over weekends, and during summer months. In terms of scope or student involvement, this approach provides for a wide range of conditions. A student might work for a minimum of 100 hours which would parallel the program of one who for various reasons conducted a production project with a minimum number of animals or acres of crops. On the other hand, this program provides for maximum initiative and growth.

Examples of this arrangement can be illustrated by actual cases where students with some of our best supervised farming programs obtained additional occupation experience in other types of agricultural businesses. One student worked over 700 hours in a butcher shop in addition to conducting a supervised farming program; another student worked 950 hours in a farm machinery business in addition to his regular farming program. Other students have worked from 1,400 to 1,600 additional hours in nurseries and greenhouses, tack shops, and fruit farms.

This approach to supervised occupational experience is practical and realistic in many Pennsylvania high schools. Teachers have experience with the traditional supervised farming program and find parallels in terms of student orientation, planning, supervision, and record keeping. One manager of an agricultural supply business, formerly an outstanding vocational agriculture student in high school, who had two boys working for him in a supervised occupational experience program said: "With a few adjustments, I see no difference between this and supervising a farming program." Because students are working out-of-school hours, no school scheduling problems are involved. Many Pennsylvania high schools are located in rural areas and do not have a concentration of agricultural business close to the school. So the program must be flexible to take care of the many local differences. Students can work during summer months, during peak business seasons, or at other times which best meet the needs of employer and student.

GUIDELINES

Many helpful guidelines and procedures for conducting supervised occupational experience programs have been developed. Some of the practices and procedures common to successful programs in Pennsylvania are discussed below.

The Program Has Official Approval

Because a total program of supervised occupational experience involves farmers and other businessmen in the community, it is very important to have official approval for the program by school administrators and the school board. This official approval aids the teacher as he works with scheduling officers in the school; it aids in the publicity and public relations program; and it establishes the program as an official function of the school in case of liability.

The following major headings are illustrative of the topics about which policy statements were developed by one teacher in Pennsylvania when the program was started in his school.

—Length of time for on-job instruction and the amount of school released time for occupational experience
—Age of students
—Selection of students
—Wages paid students
—Student safety, liability, and insurance
—Experience plans and agreements
—Supervision by the employer
—Supervision by the teacher of agriculture
—Consulting committee
—Selection of businesses
—Placement of students
—School credit for on-job experience

The Program Is Planned and Records Are Kept

Most Pennsylvania teachers of agriculture are using the record book, *Records of Supervised Occupational Experience and Training in Vocational Agriculture,* and the accompanying "Teacher's Guide" which is printed by French-Bray Printing Company.

The record book provides for student consideration of occupational areas in agriculture which are appropriate for him; the development of a list of skills that can be performed on the job; an agreement signed by the student, employer, parent, and teacher; records of work performed, wages received, and related records; and evaluation of the program by teacher and employer.

A practice used sucessfully by Pennsylvania teachers is to provide students with information about the businesses used for occupational experience. This information helps the student select a business in which he is interested. The information about each business includes a description of the products and services of the business and a description of the types of experiences students will receive if placed in the business.

The Program Involves Classroom Instruction Prior to and During Employment

Units of instruction dealing with career planning, preparing for employment, human relations, and the organization of agricultural businesses are being taught prior to and during employment. This instruction assists students in choosing an agricultural business in which to work, helps them develop a list of needed experiences in the business, orients students to the kinds of work in agricultural businesses, and shows how businesses are organized and operated.

The Employer Is Involved in Determining Experiences

If certain experiences are to be obtained and specific skills learned by a student, the employer must understand the program and must be consulted. The student-employee should have an opportunity to understand the total business operation and to have some experience working in the several divisions of the business. To accomplish this task, teachers must work closely with managers of businesses to assist them in defining and listing areas in which students will work to obtain experience.

The Program Is Supervised by the Teacher

Successful programs are those in which the teacher of agriculture works closely with the business and parents and supervises students while they are on the job. This involvement by the teacher is a must if there is to be a planned and supervised occupational experience program.

Guidance Counselors Are Involved

Guidance counselors are in key positions to assist with encouraging and promoting programs of this kind. They may become involved in scheduling, they can provide occupational information, and they may be needed in counseling and guidance situations. For a number of Pennsylvania teachers of agriculture, the supervised occupational experience program has been the means by which communications and understanding between the counselor and teacher have been established.

Students Are Paid for Working

A number of factors dictates that students should be paid for an occupational experience program. The exact number of hours to be used as a dividing line between non-paid and paid students will vary due to local situations. Paying students for work is related to liability, student age, student interest, employer control of student, teacher control of the total program, and labor unions.

The Program Is Evaluated by the Employer

If the employer aids with planning and supervises the work of a student, he should have a part in evaluating the student. Teachers have developed forms for use by employers in evaluating student performance. Specific skills and jobs performed in each business are evaluated by the employer on the form.

The Program Is Publicized

A supervised occupational experience program involves the school district and the high school agricultural program with the business community in a very close relationship. Publicity about the program is important and must be handled carefully. The right kind of publicity will further promote the program with students, parents, school personnel, and businessmen.

Feature articles in local newspapers which include names of businessmen, names of students, kinds of work done, and pictures do much to enhance the program and inform others of the purposes and activities of the program. The image of agricultural education in secondary schools is being changed in many Pennsylvania communities by this kind of publicity.

IMPLEMENTING POLICY

The section of U.S. Office of Education Vocational Education Bulletin Number 1 dealing with soundness and quality of instruction states: "The program of instruction will combine and coordinate related instruction with field, shop, laboratory, cooperative work, or their occupational experience which (1) is appropriate to the vocational objectives of the students, and (2) is of sufficient duration to develop competencies necessary to fit him for employment in the occupation or occupational field for which he is being trained, and (3) is supervised, directed, or coordinated by a person qualified under the State plan."

We believe the supervised occupational experience programs being implemented in Pennsylvania are consistent with the intent of this statement.

LAND LABORATORY AIDS LEARNING

RODNEY TULLOCH
Teacher of Vocational Agriculture
Ovid-Elsie, Michigan

Although land laboratories have been operated by many schools for a number of years, the limited experience of teachers, lack of facilities and financing, and the confined interest of the community have often restricted the activities of the land laboratory. The result has often been insufficient experience for students.

Emphasis on off-farm agricultural occupations has added new dimensions to the curriculum in agricultural education. More students are enrolling in vocational agriculture with a limited farm background. These and other factors have increased the need for land laboratories as well as for occupational experience programs to prepare persons for agricultural careers.

Learn by Doing

The land laboratory serves as an excellent means for students to learn by doing. The proper use of a land laboratory tends to keep instructors learning along with students. The land laboratory makes possible the maximum use of resource people when it is used as a community project. Teachers are stimulated in their acquisition of knowledge as a result. When used in this manner, an added benefit is that students who have worked with these resource people are more likely to consult them in the future.

Through cooperative projects with groups in the community, students learn how to change things in the community. The need for leadership skills becomes more apparent to them. While they learn the importance of good planning, they also learn that well planned projects can go awry. More important they learn that such situations do not have to be detrimental and that some good can come from unfortunate situations. For example, on our land laboratory the poultry house burned in a cooperative poultry project in which the students owned shares. This led to study and discussion of insurance, fire safety, and related topics which suddenly became interesting. An accident while hauling corn was followed with a discussion of the use and importance of slow moving vehicle signs and other safety precautions.

Land Laboratory

Our land laboratory is located adjacent to the high school on about twenty-two acres with ten acres in forest. Two vocational agriculture teachers coordinate the program. Team teaching is used as each teacher works primarily in his areas of competence. Many resource persons are used. A man-made pond is located on the site and along with the forest is used for biology and nature study classes.

Teaching areas involving the land laboratory include safety, plant science, forestry, soil science, agricultural mechanics, wildlife and conservation, horticulture, recreation and park management, livestock management, poultry management, nursery management, landscaping, and floriculture.

The school owns a tractor, plow, disc, drag, cultivator, corn planter, mower, blade, and chain saw. Other equipment is rented or borrowed when needed. Additions and improvements to the land laboratory involve student participation.

Safety Instruction

Safety is stressed throughout the program. The following are examples of safety instruction at the land laboratory involving the use of resource persons.

—handling and application of agricultural chemicals

—using protective clothing and masks

—treating and using treated seeds

—using chemicals for internal and external treatment of livestock and poultry

Rodney Tulloch

At the time this article was written, Rodney Tulloch was teaching vocational agriculture in Ovid-Elsie, Michigan. Mr. Tulloch is presently studying for the Ph. D. in agricultural education at The Pennsylvania State University.

—fencing, housing, and handling livestock

—controlling fires on equipment and in housing

—displaying properly slow moving vehicles signs

—operating tractors and implements

—practicing safety with the farm pond

—using flammable materials

—using the chainsaw, axe, wedge, and other tools; removing dead and damaged trees

Although the many teaching situations provided by the land laboratory make it a valuable asset to the vocational agriculture program, it is student participation in the planning and operation of the laboratory that has led to great student interest.

The Agricultural Program at Modesto Junior College

DWIGHT WAIT
Modesto (California) Junior College

Dwight Wait

The instructional program in agriculture at Modesto Junior College (California) operates in three areas: the day program involving primarily students who are recent high school graduates; the extended day program involving adults with a majority of the students being adults; and special programs involving adults only in short courses including Manpower Development and Training Act programs for upgrading workers.

The Program

The agricultural program at Modesto Junior College resulted from studies of community advisory committees in 1948-49. These studies were a part of a larger occupational survey of the Modesto area conducted by the College and a research team. The agricultural program has grown from 45 students in 1950 to 597 students in 1967-68. Staff has increased from three faculty members in 1950 to nineteen at the present time. Included in the present faculty are one full-time instructor for counseling and a part-time instructor for special programs.

Offerings have expanded so that majors are offered in horticulture, crop production, poultry, dairy, livestock, agricultural engineering, ornamental horticulture, economics and management, and forestry. In addition technical education programs are provided for preparing agricultural laboratory technicians, quality control technicians, artificial insemination technicians, fluid power technicians, landscape and park technicians, and nursery production technicians.

Occupational Experience

Work experience has been required since the inception of the agricultural program at Modesto Junior College. A variety of experiences are provided ranging from self-employment to employment in off-farm agricultural industries. Because of the broadened scope of offerings in the department during the past several years, an exploratory work experience educational program has been initiated.

There were several reasons for initiating the exploratory program. An increasing number of students lack background or experience in agriculture prior to enrolling in the instructional program in agriculture. The exploratory program is used effectively as an adjunct to occupational counseling and guidance. Some students need an orientation to work and need to develop good work habits to profit best from continued education.

Administrative Arrangement

In the administration of the work experience program the responsibilities of the Agriculture Department at Modesto Junior College include the following:

—Provide through coordinators, supervisors, and counselors continuous guidance services for all students.

—Select and approve work stations which provide experience that is useful and educational.

—Ascertain that applicable federal, state, and local laws and regulations are followed.

—Evaluate the student's progress with the help of the employer.

—Award credit toward graduation for work successfully completed. The amount of credit is based on the number of hours spent on the job. The activities engaged in by the student must be of sufficient variety and duration to give the student a realistic understanding of the type and scope of the activities conducted in the business.

—Assign a sufficient number of qualified personnel to direct and coordinate the students' work experience with the college's curriculum.

A cooperating employer demonstrates a correct method in the handling of bedding plants to a student who is studying to be a nursery sales and service technician.

All students participating in the work experience program must enroll in a related course. This required course is directed toward the development of appropriate goals and the contribution of work experience toward the achievement of those goals.

Supervision

In addition to the weekly sessions with regular instructors, students receive on-job supervision by the staff of the College. Students are required to keep careful and accurate records of their work experience program. A complete record book for each student includes the following: personal history and self-appraisal, school and community activity record, vocational goals and objectives, skills needed and means of attaining skills, record of work experience including skills practiced and hours spent on each skill, instructor's recommendation and grading sheet, employment history, training station agreement, and employer's rating sheet.

This record book of each student enrolled in the agricultural programs furnishes information for follow-up studies and for state and federal reports. It is an excellent source of referral information on each student.

HAZARDOUS OCCUPATION ORDERS: Their Application in Vocational Agriculture

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John W. Lacey

The November 7, 1967, issue of the *Federal Register* contains, in part, a listing of the agricultural occupations which have been declared to be particularly hazardous for the employment of persons under the age of sixteen. It also contains a definition of the term "agriculture" as it applies to the issuance of the order. In addition, exceptions to the order are listed and the conditions under which "student-learners" in vocational agriculture programs may be exempted from the order are outlined.

The issuance of the order specifying the occupations which were determined to be particularly hazardous was made in response to the 1966 amendments to the Fair Labor Standards Act. The effect of the order is to make it unlawful to employ any person under sixteen years of age in any of the agricultural occupations listed as particularly hazardous unless that person meets the conditions outlined in the order for a student-learner or is specifically excepted by the order.

The order, issued on an interim basis, became effective on January 1, 1968, and will expire on January 1, 1970, unless it is amended or revoked. The Department of Labor is presently holding informal meetings with representatives from farm and other groups and conducting field studies to evaluate the results and impact of the order. It is quite likely that some amendments may be forthcoming. It is also reasonable to assume that the order will not be revoked and will, therefore, remain in effect beyond January 1, 1970. Teachers of vocational agriculture should be very familiar with the provisions of the hazardous occupation orders for agricultural employment as well as for non-agricultural work.

Importance to Agricultural Educators

For years farm boys have taken advantage of the opportunity to work for a neighbor or for a farmer in the community during the rush season when the work was caught up at home or when there were older or younger brothers who could handle the work on the farm. Many of these boys are students in a high school program of agricultural education who are developing their own supervised farming programs. They use this supplemental income to expand and develop their farming programs. Employing farmers have utilized the services of these boys for short periods of time when a full-time employee has not been needed or was unavailable. The Secretary of Labor has estimated that paid farm workers under sixteen years of age comprise about one-fourth of the total farm work force.

Over the years urban students with an interest in an agricultural career have enrolled in high school programs of vocational agriculture. Frequently, these students have no home farm on which to obtain supervised practice or to carry on a farming program. These students have been placed with working agreements on farms of cooperating farmers in order to provide them the opportunity to learn by doing.

In recent years there has been an increasing interest among urban students to prepare themselves for a career in an agricultural occupation. In order to prepare themselves for such a career, they are enrolling in agricultural education programs in increasingly large numbers. Subsequently, the practice of farm placement has multiplied many times. In many cases both the student who works for the neighbor and the urban student who is placed on a farm for supervised occupational experience participate in the kinds of activities which have now been declared particularly hazardous. Many of these students are less than sixteen years of age and are subject to the new rulings under the child labor laws.

Vocational educators have long recognized that a student who is well trained and closely supervised in an actual work situation is well aware of the hazards involved in employment. If he is provided the opportunity to work under supervision and to practice safety in hazardous occupations—whether it be operating a farm tractor, a turret lathe, or a milling machine—it is likely that he will continue safe work habits throughout his career.

Exceptions to the Agriculture Order

Specific exception is granted in the order which ". . . shall not prohibit the employment of a child below the age of 16 by his parent or by a person standing in the place of his parent on a farm owned or operated by such parent or person." The vocational agriculture student who is developing his own supervised farming program on his home farm under the supervision of his parents or a guardian is in no way affected by the new hazardous occupation order. He is free to participate in any of the hazardous occupations involved in conducting his own supervised farming program or to work for his parent or the person standing in place of his parent on the home farm if it is owned or operated by his parents or the person who stands in place of his parents.

Exemption for Vocational Agriculture Student-Learners

The student who is placed on a farm other than his own for supervised occupational experience is exempt from the order and may participate in any or all of the hazardous occupations provided that the following conditions are met:

- The student is enrolled in a bona-fide vocational agriculture program under a recognized state or local educational authority or in a substantially similar program in a private school.
- The student is employed under a written agreement which provides that:
  - —Work in the hazardous occupations shall be incidental to the training.
  - —Work in the hazardous occupations is intermittent, for short periods of time, and under the supervision of a qualified and experienced person.
  - —Safety instruction has been given by the school and will be correlated by the employer with on-the-job training.
  - —A training outline showing progressive work processes to be performed on the job has been prepared.
  - —The agreement contains the name of the student, is signed by the employer and a person authorized to represent the school, and a copy is filed with the employer and the school.

The exemptions for student learners apply to all sixteen of the hazardous occupations. A list of the hazardous occupation orders in agriculture accompanies this article. The application of these exemptions must not be contrary to state or local law. The exemption privileges for student-learners to work in agricultural occupations which have been declared to be hazardous are for students under the age of sixteen.

A Federal Extension Service exemption makes provision for exemption of 4-H Club members and youth who are neither 4-H Club members or student-learners. The Federal Extension Service exemption applies only to orders 5 through 10. Details of the Federal Extension Service exemption are outlined in the *Federal Register*, Volume 33, Number 96, May 16, 1968, or in U. S. Department of Labor 28CRF, Part 1500.70, *Hazardous Occupations in Agriculture.*

HAZARDOUS OCCUPATION ORDERS IN AGRICULTURE RELATING TO THE EMPLOYMENT OF PERSONS UNDER AGE SIXTEEN*

1. Handling or applying anhydrous ammonia, organic arsenic herbicides, organic phosphate pesticides, halogenated hydrocarbon pesticides, or heavy-metal fungicides, including cleaning or decontaminating equipment used in application or mixing of such chemicals.
2. Handling or using of blasting agent. For the purpose of this subparagraph, the term "blasting agent" shall include explosives such as, but not limited to, dynamite, black powder, sensitized ammonium nitrate, blasting caps, and primer cord.
3. Serving as flagman for aircraft.
4. Working as (1) driver of a truck or automobile on a public road or highway, or (2) driver of a bus.
5. Operating, driving, or riding on a tractor (track or wheel) over 20-belt horsepower, or attaching or detaching an implement or power-take-off unit to or from such tractor while the motor is running.
6. Operating or riding on a self-unloading bunk feeder wagon, a self-unloading bunk feeder trailer, or self-unloading forage box wagon, a self-unloading forage box trailer, a self-unloading auger wagon, or a self-unloading auger trailer.
7. Operating or riding on a dump wagon, hoist wagon, fork lift, rotary tiller (except walking type), or powerdriven earthmoving equipment or powerdriven trenching equipment.
8. Operating or unclogging a powerdriver combine, field baler, hay conditioner, corn picker, forage, harvester, or vegetable harvester.
9. Operating, feeding, or unclogging any of the following machines when powerdriven; Stationary baler, thresher, huller, feed grinder, chopper, silo filler, or crop dryer.
10. Feeding materials into or unclogging a roughage blower or auger conveyor.
11. Operating a powerdriven posthole digger or powerdriven driver.
12. Operating, adjusting, or cleaning a powerdriven saw.
13. Felling, bucking, skidding, loading, or unloading timber with a butt diameter of more than 6 inches.
14. Working from a ladder or scaffold at a height over 20 feet.
15. Working inside a gas-tight type fruit enclosure, gas-tight type grain enclosure or gas-tight type forage enclosure, or inside a silo when a top unloading device is in operating position.
16. Working in a yard, pen, or stall occupied by a dairy bull, boar, or stud horse.

Source: **Federal Register**, Volume 32, Number 216, November 7, 1967, **Child Labor Regulations, Orders, and Statements of Interpretation.**

*Exemptions to all hazardous occupations in agriculture are available to vocational agriculture student-learners.

Implications for Off-Farm Agricultural Occupations

In the order listing hazardous occupations in agriculture, agriculture is defined as "farming in all its branches, including among other things, the cultivation and tillage of the soil, dairying, the production, cultivation, growing and harvesting of any agricultural or horticultural commodities . . ., the raising of livestock, bees, fur bearing animals, or poultry, and any practices (including any forestry or lumbering operations) performed by a farmer or on a farm as an incident to or in conjunction with such farming operations, including preparation for market, delivery to storage or to market or to carriers for transportation to market." The definition obviously does not include, for example, grain, feed, seed and farm supply businesses; grain elevators; farm equipment dealerships; farm equipment repair shops; fertilizer and farm chemical dealers, or similar kinds of businesses.

Students and teachers developing and conducting supervised occupational experience programs with employers who operate businesses providing supplies or services to farmers and ranchers will be required to follow the child labor provisions of the Fair Labor Standards Act as amended in 1966. These provisions are detailed in Child Labor Bulletin 101 (Revised), *A Guide to Child Labor Provisions of the Fair Labor Standards Act as Amended in 1966*, U. S. Department of Labor.

Vocational agriculture teachers planning supervised occupational experience for students in off-farm agricultural occupations should be familiar with the provisions of the child labor law. An important provision is that

(Continued on next page)

Hazardous Occupations Orders: Their Application in Vocational Agriculture

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which states "At 16 years of age young people may be employed in any occupation other than those non-agricultural occupations which have been declared as hazardous by the Secretary of Labor. There are no other restrictions. If it is not contrary to State or local law, students of this age may be employed during school hours or off school hours." A list of the hazardous occupation orders in non-agricultural occupations is included in this article.

Exemptions to the non-agricultural hazardous occupation orders number 5, 8, 10, 12, 14, 16, and 17, are available to apprentices and student-learners. Few, if any, or the occupations in which vocational agriculture students wish to work are apprenticeship trades. Student-learners granted exemptions from these orders are required to meet the same provisions as students employed in hazardous occupations in agriculture. There are no provisions for the exemption of students under the age of sixteen to work in non-agricultural occupations which have been declared hazardous. The exemption privileges for student-learners to work in non-agricultural occupations which have been declared to be hazardous are for students between sixteen and eighteen years of age. Special note should also be taken that the exemption privileges afforded student-learners in non-agricultural occupations apply only to those orders specified and not to the entire list of seventeen non-agricultural hazardous occupation orders.

Orders number 2 and 7 have special significance for off-farm occupations. For example, a student employed in a feed mixing plant would likely find it desirable to drive a delivery truck or serve as a helper on a truck in delivering bulk feed. Hazardous Occupation Order Number 2 has been relaxed to make it possible for a student learner to serve as a helper when he rides inside the cab of the truck to and from the farm or feed mixing plant. The student may also serve as the driver of a vehicle under 6,000 pounds gross weight during daytime only, provided the student holds a valid state driver's license and has completed a state approved driver education course. The vehicle must be equipped with seat belts and the employer must have instructed the student that the belts must be used. Students graduating from high school prior to their eighteenth birthday are exempt from the non-agricultural hazardous occupation orders in which they have completed training as student-learners. Order number 7 has been relaxed in order to make it possible for a student learner to operate fully automatic passenger or freight elevators when they are controlled by push buttons.

Other specific details concerning the hazardous occupation orders number 2 and 7 including their definition and interpretation is found in Title 29, Chapter XIII, Part 1500, *Child Labor Regulations, Orders and Statements of Interpretations.*

It should be made clear that the recently issued hazardous occupation orders for agricultural occupations in no way affect the laws applicable to the employment of students in off-farm agricultural occupations. Hazardous occupation orders do not apply to both agricultural and non-agricultural occupations. Each group has its own set of hazardous occupation orders. The key point is to be familiar with the definition of "agriculture." The definition, quoted earlier in this article, is issued by the U. S. Department of Labor and is the definition on which the application of the hazardous occupation orders is made.

HAZARDOUS OCCUPATION ORDERS IN NON-AGRICULTURAL OCCUPATIONS

1. Occupations in or about plants or establishments manufacturing or storing explosives or articles containing explosive components.
2. Occupations of motor-vehicle driver and helper.
3. Coal-mine occupations.
4. Logging occupations and occupations in the operation of any sawmill, lath mill, shingle mill, or cooperage-stock mill.
5. Occupations involved in the operation of power-driven woodworking machines.
6. Occupations involving exposure to radioactive substances and to ionizing radiations.
7. Occupations involved in the operation of elevators and other power-driven hoisting apparatus.
8. Occupations involved in the operation of power-driven metal forming, punching, and shearing machines.
9. Occupations in connection with mining, other than coal.
10. Occupations in or about slaughtering and meat-packing establishments and rendering plants.
11. Occupations involved in the operation of certain power-driven bakery machines.
12. Occupations involved in the operation of certain power-driven paper-products machines.
13. Occupations involved in the manufacture of brick, tile, and kindred products.
14. Occupations involved in the operation of circular saws, band saws, and guillotine shears.
15. Occupations involved in wrecking, demolition, and ship-breaking operations.
16. Occupations involved in roofing operations.
17. Occupations in excavation operations.

Source: **A Guide to Child Labor Provisions of the Fair Labor Standards Act as Amended in 1966,** Child Labor Bulletin 101 (Revised), U.S. Department of Labor.

Employment of Full-Time Students at Special Minimum Wages

Student-learners meeting all provisions described previously may be employed in retail or service establishments or in agriculture at a wage rate not less than 85 per cent of the established minimum. In order to fulfill these requirements a certificate must be issued in accordance with the regulations. Vocational agriculture teachers should be familiar with the regulations dealing with minimum wage rates. The regulations are detailed in Title 29, Part 519 of the Code of Federal Regulations, *Employment of Full-Time Students at Special Minimum Wages* and in Title 29, Part 520 of the Code of Federal Regulations, *Employment of Student Learners.*

All publications cited in this article are available from the U.S. Department of Labor, Wage and Hour and Public Contracts Division, Washington, D.C.

Developing Training Plans for Occupational Experience Programs

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As a result of conducting programs in Agricultural Occupations and Employment Experiences for the past four years, I have come up with the conclusion that the training program is only as good as is the training plan. In an attempt to minimize planning procedures I have designed a format for the preparation of a training plan that has proven successful.

Individual Plans

Each senior student prepares a carefully designed training plan in triplicate that is eventually handed to his instructor and his training station supervisor. The student keeps one copy. After the training plan has been prepared it is kept up to date by frequent reference. At the beginning of each week during the employment experience program the student is asked to prepare a brief plan of activities for the upcoming week and a brief summary of activities done the preceding week. In this manner the training plan is closely adhered to and kept current. A duplicate copy of the plan for the upcoming week is taken by the student to his training station and placed on a clipboard in the supervisor's office. This has been very successful and is well received by training supervisors.

Developing Training Plans

A four-stage plan has proven to be most successful. Stage I involves the listing of employment experience objectives. These objectives are listed as abilities desired and understandings desired. This is an appropriate time to involve the training supervisor, parents, student, and instructor. All these persons must be involved in planning a comprehensive occupational experience program.

Stage II deals with units and problem areas to be studied and stipulates the approximate quarters of the school-year in which the work will be done. The units are standard throughout the class and include the following: business overview, career opportunities, employment experience orientation, agricultural business safety, human relations, agricultural salesmanship, organization and function of agricultural businesses, business procedures, and agricultural technology.

Students plan the problem areas desired within these units. Throughout the year related instruction is given in the classroom and laboratory. An attempt is made to have students parallel their on-job experiences with the units being discussed in class.

Stage III includes individual jobs that the student desires to complete during the training period. These jobs are planned by all parties involved and are made quite specific. The objective for each job would simply be to "take it to the doing stage." These jobs may be completed in the actual training station itself, as a part of related classroom study, or in individual study.

Stage IV is a job outline sheet whereby the student actually completes jobs listed in Stage III. This stage has proven very effective as a means of individualized study and adapts quite well for instructor evaluation of the student.

Selecting Business Advisors

An advantage in planning and completing a good training plan is the assignment of a business advisor to each student as he approaches the training period. This business advisor need not necessarily be the supervisor he will ultimately work for during the on-job training period. A good criterion for the selection of a business advisor is to involve a competent individual that enjoys working with a younger person in learning about the business. These people are in an abundance in any community and thoroughly enjoy becoming involved. Even though the student will not necessarily need to use this advisor frequently, it is a very good idea to have him available to advise the student.

Student Directed Learning

Our experience shows that much good comes from having students prepare their own training plan. It is much more desirable than a prepared manual or the like. With a knowledge of their own objectives and their own ways and means of fulfilling these objectives, the program can be a learning experience that is under the student's direction at all times. A review of training plans completed by students reveals that they truly are a means to success in a supervised occupational experience program in agriculture, both in production agriculture and off-farm agricultural occupations.

Larry L. Statler

Larry L. Statler is Head, Agricultural Education, Area X Community College, Cedar Rapids, Iowa. Copies of the forms for developing training plans that are described in this article are available from the author.

DIRECTED WORK - EXPERIENCE PROGRAMS IN AGRICULTURAL EDUCATION

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Since October 1967 Cornell University has been engaged in a developmental project concerned with the development and improvement of directed work-experience programs in expanded vocational education offerings in agriculture at the secondary level. Three objectives have been central:

—To develop tested procedures for the guidance of teacher-coordinators in initiating and operating directed work-experience programs for occupational education offerings in agriculture.

—To assess the contribution of directed work-experience to attainment of educational objectives.

—To determine whether differing amounts of directed work-experience contribute differentially to educational and occupational outcomes.

PROCEDURES

The recommendations of teacher educators and state administrators for initiating and operating work-experience programs in the several specialized fields of occupational education were garnered from a review of the literature and from extensive interviews. This potpourri of ideas was sifted, ordered, and further sharpened by calling on the experience of teacher-coordinators of both typical and innovative work-experience programs. These explorations took the investigators into twelve Northeastern states for interviews with representatives of technical and industrial education, home economics education, distributive education, business education, and agricultural education. In order to insure compatability of the tentative procedures with the students, parents, and employers, an assessment was made of the concerns and expectations of these groups when they were first asked about participation in a directed work-experience program.

The next step was to synthesize the gleanings winnowed from these courses into guidelines and proccdures. Teachers of agriculture in sixteen schools located in the Northeastern Region of the United States systematically implemented the guidelines and procedures with senior students during the period July 1, 1966 to June 30, 1967. Included among participating programs were nine preparing students for work in ornamental horticulture and seven in agricultural mechanization.

Essentially, the programs involved the placement of students for directed work-experience with participating employers who agreed to provide remunerated work-experience, on-the-job instruction, and individualized supervision at work. Teachers assumed the principal responsibility for coordinating the content of school instruction with the students' work-experience.

OUTCOMES

• Evaluation of Guidelines

In order to assess the guideline's acceptability, their contribution to the success of the vocational program, and their practicability, the guidelines were submitted to the evaluative judgment of their most competent critics—the teachers, students, and employers who had put them into practice over the period of a year. Inventories were devised to identify the guidelines with which each respondent had experiential familiarity and to determine the categorical and comparative importance of each guideline in the estimation of experienced respondents.

Findings revealed that all three groups decisively endorsed the value and utility of the essential core and substance of the guidelines and procedures. The conclusions drawn from this aspect of the inquiry are that the guidelines and procedures successfully withstood a rigorous empirical trial and represent a useful and acceptable structural model for the organization and conduct of directed work-experience programs in vocational agriculture.

As a result of these findings and in conjunction with the observations of the investigators and the personal reports of participating teachers, the guidelines and procedures have been revised and published as Cornell Miscellaneous Bulletin 91, *The Teacher-Coordinator's Manual for Directed Work-Experience Programs in Agriculture.*

• Contribution of Directed Work-Experience to Attainment of Educational Objectives

In order to evaluate the effectiveness of directed work-experience with respect to the educational and occupational objectives of vocational agricultural education, the performance of program participants on selected criteria was compared with the performance of students enrolled in similar courses of study. Schools selected for this purpose offered typical programs of classroom instruction and a school-based practicum of shop, greenhouse, or nursery projects. Comparison Centers, as they were labelled, met all the criteria laid down for the selection of a school as a Try-Out Center except that during the try-out phase of the project they did not offer students an opportunity to engage in directed work-experience. Comparisons were made between Try-Out and Comparison Centers on the following criteria:

—the proportion of students who actually obtained employment experience in any capacity during the period of the try-out phase,

—the porportion of students who actually obtained curriculum-related employment during the same period,

—the achievement of students in technical knowledge and competence as measured by multiple-choice achievement tests,

—a measure of attitude toward work, and

—the proportion of students who upon graduation from high school entered upon curriculum-related employment or advanced study in agricultural science.

The results in all instances except the comparison for level of job satisfaction showed statistically significant differences between Try-Out and Comparison Center students. The differences, as hypothesized, favored the superior effectiveness of the directed work-experience programs. Note that Comparison Center programs had satisfied currently accepted standards of excellence as a criterion of selection for inclusion in the study. The superior attainment of directed work-experience participants represents, therefore, a notable improvement in the effectiveness of vocational training in agriculture with respect to relevant criterion variables.

• The Effect of Differing Amounts of Directed Work-Experience upon Educational Outcomes

The study sought also to assess the effect of the extent of work-experience upon criterion performance. This has a direct bearing upon the justification, questionable in the estimation of the investigators, of imposing the customary, rigid, and arbitrary minimum work-experience requirement prescribed in many quarters for vocational students.

Students who engaged in directed work-experience at Try-Out Centers were permitted within flexible limits to exercise control over the extent and duration of their employment. It was hypothesized that under such conditions the criterion performance of "high" and "low" experience students (groups divided at the median number of hours worked) would fail to support the relevance of the amount of work-experience obtained. "High" and "low" experience groups were compared for group differences on the same criteria used to evaluate the effectiveness of Try-Out Center programs versus Comparison Center programs. In addition, a comparison was also made between "high" and "low" experience groups for differences in job performance ratings assigned by employers or work supervisors. For this purpose a "Work Rating Scale" was devised which included evaluation of a wide range of worker-traits.

On all criteria except the "Work Rating Scale," differences in criterion performance were negligible as expected. On the "Work Rating Scale" a significant differences was observed on mean ratings. Substantially higher ratings were assigned students who fell in the "high" experience category. However, the difference was quantitative rather than qualitative since even the "low" experience group consistently earned high performance ratings. Moreover, evidence was also found in a study of employer concerns and expectations regarding experience programs to imply strongly that employers are predisposed to assign higher performance ratings to students who engage more extensively in directed work-experience.

The approach adopted to investigate the effects of the extent of work and the justification of a minimum requirement precludes a definitive conclusion. However, the results strongly imply that student self-determination in this matter may well be as effective as the imposition of arbitrary requirements.


Harold R. Cushman


Charles W. Hill


John K. Miller

This article reports the results of a developmental project, "The Development and Improvement of Directed Work-Experience Programs in Expanded Vocational Education Offerings in Agriculture at the Secondary School Level," which was conducted at Cornell University. The project was supported by a grant from the U. S. Office of Education. The following publications are the result of the project.

Guidelines and Procedures for Directed Work-Experience Programs in Vocational Agricultural Education, 1966. 24 pp.

The Concerns and Expectations of Prospective Participants in Directed Work-Experience Programs, 1967. 55 pp.

The Teacher-Coordinator's Manual for Directed Work-Experience Programs in Agriculture, Cornell Miscellaneous Bulletin 91, 1968. 44 pp.

The Development and Improvement of Directed Work-Experience Programs in Expanded Vocational Education Offerings in Agriculture at the Secondary School Level, Final Report to the U. S. Office of Education, 1968. 154 pp.

Inquiries concerning the project and the publications should be addressed to the authors at the Agricultural Education Division, Department of Education, New York State College of Agriculture, Cornell University, Ithaca, New York 14850.

Themes for Future Issues

January	***Teacher Education***
February	***Agricultural Education in Area Schools***
March	***Student Organizations***
April	***Teaching — Instructional Materials***
May	***Program Planning and Curriculum Development***
June	***Public Information Programs***

An Agricultural Mechanics Program for Small Schools

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Teaching vocational agriculture mechanics is complex and expensive for small rural schools. The methods used at Crothersville High School are designed to overcome this obstacle. A four-year program has been designed for students desiring to enter an implement dealership.

Introductory Course

A course in principles of engines is used to introduce the mechanics option to freshmen. Small gasoline engines are used in the laboratory section of this semester course. Approximately eight to ten weeks are spent in the classroom and six to eight weeks in the laboratory. All trade and industrial vocational auto mechanics students are also required to take the principles of engines course. By overlapping the two vocational areas in one related class, repetition is avoided and only one instructor is required.

Freshmen and sophomores entering agriculture mechanics or auto mechanics can take related semester courses in beginning welding, advanced welding, farm machinery, and others. Here repitition is again avoided by enrolling agriculture mechanics and auto mechanics students in the same course. The agriculture students are taking related vocational agriculture subjects during this same period.

Marvin L. Copes

Marvin L. Copes is a teacher of agriculture at Crothersville (Indiana) High School and Director of the Crothersville Vocational Agricultural Demonstration Center. The Demonstration Center is designed to demonstrate specialized programs in four options in vocational agriculture — horticulture, production agriculture, mechanics, and sales and service. The four staff members of the Center specialize and teach courses in one of the options.

Advanced Courses

Junior agriculture students enroll in a ten-hour per week course in farm power. Approximately six weeks are spent setting up farm machinery for local implement dealers. Most of the remaining time in the one-year course is spent in the development of basic mechanical skills connected with farm machinery and tractors.

Summers are busy for seniors. They may elect to take farm power during the summer between their junior and senior years. Two hours each morning for four weeks are spent in related classroom work where business procedures and on-the-job training problems are discussed. An advantage to the summer program is that additional experience can be gained.

The senior mechanics students from agriculture mechanics and auto mechanics are placed in a combined course of mechanics sales and management. In this course stress is placed on economics, technical information, marketing, business administration, and other basic skills valuable in operating an automobile dealership. It is felt that farm implement and auto dealers have similar operations; therefore, a combined related course is feasible. These students are then placed on-the-job in their respective dealers depending upon their previous mechanics option. On-the-job training is extremely important because a school is limited in its facilities and offerings. A dealership's atmosphere is needed by the student to supplement his training before actual employment in the mechanics field.

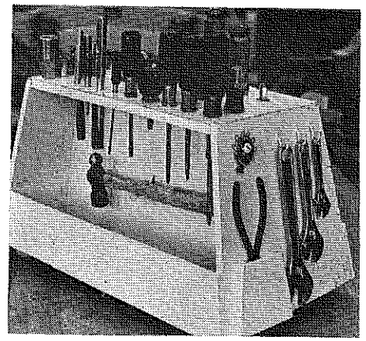
A Specialized Program

The auto mechanics and farm power classes use the same tools. By combining facilities, instruction, and equipment a small rural high school can operate a specialized mechanics program with little difficulty.

The specialized program allows vocational agriculture students to major in farm power rather than in vocational agriculture if they desire. Planned supervised experience replaces the supervised farming program for students who elect the farm power option.

A Project for Agricultural Mechanics

CARROLL RUDD
Teacher of Agriculture
Manlius, New York



The unique feature of the kit is that all tools are readily visible. Also there is a compartment on each side for carrying special tools. The compartments will hold a torque wrench, a quarter-inch electric drill, or a timing light with room to spare.

My first few years of teaching were spent watching students going here and there about the shop getting tools together to do a job. One result was that we lost many tools. I knew that there must be a better system. The result has been the construction and use of five tool kits that hold most of the tools a job is apt to require. The kits are built by students. We like the system and I have seen enough teachers sketching and measuring them to realize that this idea may have some general interest to other teachers.

Building the Kit

I built the first kit during the summer. It served as a visual model for the students to follow. This project gave the beginning students a chance to work together for the first time and got us off to a good start in the shop. I ordered five sets of tools that I thought were needed on most jobs. Each set costs about $45.00.

The kits are assembled with glue and finishing nails and are topped with a piece of plastic laminate to help keep the top clean. Each kit is painted a different color with the idea that the tools will be color coded to match the kit.

Using the Kit

A few basic rules help make the tool system work.

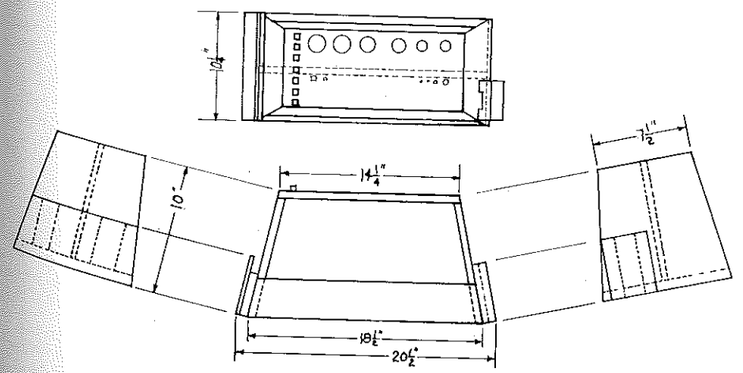
—Do not take a tool kit that is missing even one tool.
—Return all complete kits to the storeroom at the end of class.
—Lock the storeroom at night as handy tools have a way of disappearing.
—If a kit is found missing one tool, put it in storage until the missing tool can be replaced. A tool kit missing one tool has very little value and it would only be a short time before half of your tools are missing.

With these rules of operation we have come through the year with four out of five of our tool kits in service.

The use of the tool kit makes it possible to get on the job in a hurry, saves time chasing for a variety of tools, and makes it a fast job of putting all tools away. The tools we include in the kit are as follows:

1 — 8 oz. ball pein hammer
1 — 6¾" slip joint pliers
1 — 6" needle nose pliers
1 — 7½" locking plier wrench (vice grips)
1 — 10" end cutting nippers
1 — 5 pc. punch chisel set
1 — 10 pc. ⅜ drive socket set
1 — 6 pc. combination open end and box end wrench set
1 — 4" adjustable end wrench
1 — 6" adjustable end wrench
1 — 8" adjustable end wrench
1 — 6 pc. screwdriver set (rubber handles)
1 — 4 pc. phillips screw driver set
1 — ⅜ drive spark plug socket
1 — round spark plug gauge

I suggest that you build one and order enough new tools to outfit the number of kits that you need. I am sure that if you do it will help overcome some of the frustrations of teaching mechanics.



MATERIAL NEEDED FOR BUILDING KIT

⅜" plywood for the bottom, top, ends, and center dividers; ¼" plywood for sides and end holder cover; 1" pine for end holders contoured to fit pliers and socket drive T-handle; one barn door handle; socket holders; hooks for hanging adjustable wrenches; a clip for holding hammer; four cruch tips (use bottoms only to keep the kit out of grease).

Agricultural Laboratories for the Physically Handicapped

IRVIN E. ASHLEY, JR.
University of Illinois

Plants, animals, and agricultural activities can serve as key therapeutic elements in the occupational rehabilitation of the physically handicapped.

Agricultural educators have a splendid record of meeting the needs of individuals with special needs. Even though vocational educators in agriculture are experimenting with new programs for individuals with special needs, little consideration has been given to the needs of the physically handicapped.

It is estimated that there are nineteen million persons in the United States who are physically disabled. These persons suffer from diseases such as arthritis, cerebral palsy, multiple sclerosis, and muscular dystrophy. Other disabled groups include those who suffer from orthopedic conditions such as amputees, paraplegics, and post-polio complications.

A Role for Agricultural Education

Agricultural occupations teachers with properly equipped laboratories could play an important role in rehabilitation training or retraining of physically handicapped adults for gainful employment in occupations requiring knowledge and skill in agriculture. Agricultural laboratories for the physically handicapped could serve an equally important role in transition between hospital treatment and employment or home adjustment.

Agricultural occupations teachers with appropriate laboratories could structure occupational situations similar to those a physically handicapped person would encounter in returning to a farm or other agricultural occupation. An agricultural laboratory could be used to help train a physically handicapped person for a nonfarm occupation. If an individual desired to return to a farm situation, the teacher with proper laboratory facilities could help a physically handicapped person adjust to farm situations that will be encountered.

Need for Agricultural Laboratories

The objectives of rehabilitation training in a hospital or clinic are to assist the individual in becoming functionally competent with the existing disability. This involves a team consisting of physiatrist, physical therapist, and occupational therapists. Although maximum effort is made to insure that the individual is functionally and physically competent within the limitations of his disability, rehabilitation training does not insure that the individual is occupationally competent.

Frequently, adequate facilities are not available to insure that physically handicapped persons will be occupationally competent in the occupations they are returning to or retraining for. This is particularly true in occupational areas such as agriculture where medical personnel are often unaware of the physical skills involved in agricultural occupations.

Facilities which are not available to paramedical personnel in rehabilitation centers could be provided through agricultural laboratories. Agricultural laboratories for physically handicapped adults and young people could provide opportunities for developing confidence and tolerance in work situations. In many instances, community resources could be utilized to supplement laboratory facilities thereby permitting realistic training or retraining under actual work situations.

A Look Ahead

Agricultural occupations teachers with training in rehabilitation could meet the needs of disabled persons in a positive and functional way during a period when doubts about economic and social recovery are foremost in the individual's mind. Physical activities pertaining to agriculture could be incorporated into rehabilitation programs. Plants, animals, and familiar agricultural surroundings can serve as key therapeutic elements in overcoming psychological barriers which may make the difference in the acceptance of a disability and the desire to accept rehabilitation.

Agricultural laboratories for the physically handicapped could serve a vital role in closing the gap between medical care and employment through its facilities for training, work exploration, and psycho-social adjustment.

Irvin E. Ashley, Jr.

Irvin E. Ashley, Jr. is a doctoral candidate in agricultural education at the University of Illinois. He has two years experience in rehabilitation and is a certified physical therapist by the American Physical Therapy Association. Mr. Ashley's thesis research concerns an analysis of occupational opportunities in ornamental horticulture for paraplegics.

BOOK REVIEWS

GERALD R. FULLER, Special Editor
University of Vermont

FARM MANAGEMENT PRINCIPLES, BUDGETS, PLANS by John H. Herbst. Champaign, Illinois: Stipes Publishing Company, 1968, 294 pp. $8.20.

Data from studies which show striking variations in earnings from farms with similar production capacities sets the stage for this well-written text. After identifying differences in management capability as the significant variable, the author proceeds in logical fashion to identify and explain the economic principles involved in making sound farm management decisions.

The use of partial and complete budgets are considered as a means for arriving at optimum utilization of available resources. With continual feed-back to applicable principles, management procedures having to do with the cropping and livestock programs, and with the selection and utilization of buildings and equipment, are considered as they affect profits. Some attention is also given to keeping and interpreting records and to the use of credit. Numerous illustrations and examples throughout the book assist in clarifying the subject matter.

As indicated in the preface, this book is a text for a beginning course in farm management at the two- and four-year college level. It is doubtful whether its use as a reference would be meaningful to the majority of high school students. While the farm management procedures discussed are obviously applicable to any farm situation, most of the examples are Midwest oriented and some readers might find the need for application to other types of farming inconvenient. However, teachers of agriculture, and especially those concerned with adult programs, might well consider this to be the best available reference for developing a better understanding of the decision-making procedures associated with our increasingly complex farm operations.

Lyle L. Wicks
Cornell University

DEVELOPING SUPERVISED OCCUPATIONAL EXPERIENCES IN AGRICULTURE. Washington, D. C.; U. S. Office of Education, 1967, 83 pp. $1.00.

The purpose of this publication is to assist teachers of agriculture, school administrators, cooperating farmers, and agricultural businessmen with the fundamental concepts in planning and conducting supervised occupational experience programs in agriculture. After introducing the subject and defining terms, the author uses a functional model to explain how to plan for successful supervised occupational experience programs. He divides this program into four stages: initiation, preparation, participation, and interpretation.

The reader moves rapidly through the overview with the model and then procedes to a discussion of each stage. The author suggests various procedures for teachers to use in assisting pupils to develop supervised occupational experience programs. Necessary data gathering forms are also suggested for pupil use. The section on each stage is summarized by an "Instructor's Tasks" checklist to assist teachers in providing learning experiences for their pupils.

In the final section, a management plan for developing occupational experiences is discussed. A proposed plan is presented to assist teachers in developing a year-round plan of action. The publication is a must for teachers responsible for supervised occupational experience programs in agriculture. Other areas of vocational education may well utilize the principles discussed in this publication when developing occupational experience programs. This publication is suitable as a teachers' reference on the preservice and inservice levels.

W. H. Annis
University of New Hampshire

SMALL ENGINES—CARE, OPERATION, MAINTENANCE AND REPAIR. American Association for Agricultural Engineering and Vocational Agriculture. Athens, Georgia: June 1968. Volume I, 150 pp. $5.30; Volume II, 228 pp. $7.75.

These are new publications prepared from materials secured from nearly every known source of information on the subject of small gas engines. Approximately 400 references from industry, trade associations, experiment stations, colleges and others were used in compiling these volumes. One hundred and sixty-six experts and key people reviewed preliminary drafts and their corrections, suggestions, and additions were combined into the final edition. Both volumes are cross-referenced, therefore it is recommended that both be purchased in order to obtain complete subject matter coverage.

Volume I gives basic engine operating principles and step-by-step procedures for the care, operation, and service of 2-cycle and 4-cycle air-cooled gasoline engines and accessories. It is for those who operate and maintain engines.

Volume II deals with the design and operating principles that are important for those interested in advanced maintenance and repair of 2-cycle and 4-cycle air-cooled gasoline engines. Step-by-step procedures are given along with a complete explanation for each operation.

These publications are excellent additions to the fine family of publications produced by the Association. It is doubtful if any publication can equal for content and teaching these publications.

Guy E. Timmons
Michigan State University

Supervised Experience Essential in . . .

An Educational Program for Dairy Technicians

NEIL O. SNEPP
Michigan State University

I sat in a county agent's office in Michigan in the fall of 1966 discussing farm labor problems. A dairy extension specialist and a member of the state staff of the American Dairy Association were also present. We were discussing the increasing number of good dairymen who were quitting the business. Three dairymen in that county had announced dispersal sales that week. The reason was a lack of competent, trained help.

Here is an example of a paradox in today's agriculture — a shortage of qualified farm labor in the midst of a surplus of people in rural areas. The need for trained dairy technicians in Michigan is well documented. Providing qualified dairy technicians has been more difficult, but a start has been made.

Developing the Program

Our initial attack on the problem was to submit a request for a Manpower Development and Training Act program to be conducted at Michigan State. A number of circumstances prevented the approval of this proposal so a new approach was tried. Could we develop a training program at some other location? There would need to be suitable dairy facilities which permit maximum student experience. There was a possibility at Andrews University, a private, church supported (Seventh Day Adventist) school in southwestern Michigan. The school had recently dedicated a new, modern dairy facility designed for a commercial 280-cow operation with a 16-cow herringbone parlor, 2,000 gallon bulk tank, automatic feeders, freestall housing, and other facilities. The facilities appeared nearly ideal.

Representatives of the Rural Manpower Center and the Dairy Department at Michigan State University met with the staff of the agriculture department and the administration at Andrews University. We were interested in developing a training program which would help meet the needs of the dairy industry and provide some choice of job selection to the trainees. We believed that the program should have sufficient depth to enable the graduate to advance in employment. We wanted more than just good milkers.

The program that evolved would qualify the successful graduate to be employed in DHIA work, as an artificial inseminator, or on a dairy farm as an assistant herdsman. It was to be a 32-week program on the post-high school level. The program was divided into two, 16-week sessions which provided flexibility in the event some students could not handle the advanced management phase of the training. Andrews University agreed to establish the program on a trial basis provided funding was secured. In addition to help in preparing and submitting the proposal, Andrews University requested assistance in developing instructional materials, securing staff and resource persons, and selecting students.

Instructional Materials and Staff

Michigan State University's Rural Manpower Center and dairy extension specialists collaborated to prepare instructional materials. The Dairy Department agreed to provide selected staff members as resource people. The state DHIA and Michigan Artificial Breeders Cooperative provided resource persons and teaching materials. Five manufacturers of dairy equipment, two processors, and a farmer were involved in field trips and demonstrations as part of the instructional program.

Selection of Students

In Manpower Development and Training Act programs the selection of students is a function of the Michigan Employment Security Commission. Past experience had indicated that persons selected at random who needed some kind of training or skill upgrading would not necessarily become good dairymen. We listed the following desirable characteristics of students who could profit from the program: a high school graduate or possessor of equivalent communication skills, have studied vocational agriculture in high school, and a farm background and genuine interest in dairying. Previous experience with dairy cattle would be helpful. Andrews University has definite policies on student conduct. For example, drinking and smoking are not permitted on campus. Prospective students would need to abide by these policies.

Neil O. Snepp

Neil O. Snepp is Training Coordinator, Rural Manpower Center, Michigan State University.

Few persons with these characteristics were on lists of the Michigan Employment Security Commission. Letters were sent to all county extension agents, 4-H agents, and vocational agriculture teachers in Michigan describing the program. They were asked to identify persons with the desired characteristics who might be interested in the program. The response was good. Letters were sent to the individuals suggested with each followed by a personal interview.

(Continued on next page)

BEYL APPOINTED BUSINESS MANAGER

Doyl Beyl

Doyle Beyl, Supervisor of Vocational Agriculture in Wisconsin, has been appointed by the Editing - Managing Board as Business Manager of *The Agricultural Education Magazine*. Mr. Beyl assumes the position of Business Manager in December, 1968. He succeeds T. L. Faulkner, Head State Supervisor in Alabama.

Mr. Beyl received the bachelor's degree from Wisconsin State University, River Falls, Wisconsin, in 1948 with majors in agriculture and biology. He earned the M.S. degree from the University of Wisconsin in 1954.

He began his teaching career in 1948 at Melrose, Wisconsin, as an instructor in the Veteran Farm Training Program. From 1949 to 1960, Mr. Beyl taught vocational agriculture at Maple, Wisconsin. He served as Section I Vice President of the Wisconsin Association of Vocational Agriculture Instructors.

Mr. Beyl joined the supervisory staff of the Wisconsin Board of Vocational, Technical and Adult Education in 1960 as a supervisor of high school vocational agriculture programs. Since that time he has also served as Supervisor of the Veteran Farm Training Program and Executive Secretary of the Wisconsin Association of FFA. At the present time he supervises post-high school vocational-technical programs in agriculture which includes young and adult farmer programs as well as agribusiness programs.

An Educational Program for Dairy Technicians

(Continued from page 146)

Those who could meet Employment Security requirements were instructed to apply through the farm labor offices. Those applying were interviewed again by the farm labor representatives and the applications submitted to the Michigan Employment Commission where the final selection was made.

Twenty men were selected for the first section of the class. All the trainees selected did not meet our standards in all respects. Some qualified men declined; some dropped out. But it appeared that our guidelines for trainee selection were generally acceptable.

Training and Placement

Twenty students began the first phase of training in October 1967. Seventeen additional students began in February 1968 at which time fourteen men from the first section began the second phase. One had terminated and been employed, three had quit, and two were asked to repeat the first phase due to excessive absences. Progress has been reasonably satisfactory.

The men were available for placement in May 1968. Over fifty job orders for these graduates were on file with the Michigan Employment Security Commission. A majority of the jobs offered over $5,200 plus benefits. One job offered $6,400.

Cooperation

The important thing to note is that a program was instituted at a university that had not had previous experience with vocational agriculture. The development time was long—eight months—there were problems, friction, and opposition. The Rural Manpower Center acted as a catalyst in the process. More than fifteen organizations and individuals were involved in putting the package together. The program will be repeated in 1968-69. We have three times as many employers as graduates. We believe we have accomplished much with these cooperative efforts.

News of NVATA

JAMES WALL
Executive Secretary

Fifteen outstanding teachers of vocational agriculture will be attending the NVATA Convention in Dallas, Texas, with all expenses paid by sponsors of three national contests.

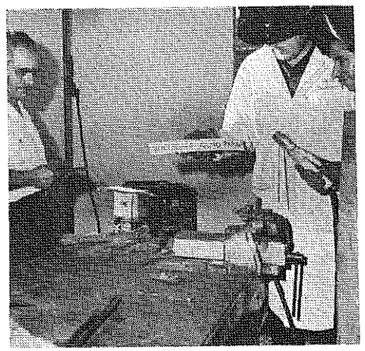
A. O. Smith Harvestore, Arlington Heights, Illinois, is sponsoring six outstanding teachers, one from each of the six NVATA Regions. Each state association was eligible to enter their top teacher in the regional competition.

The New Holland Division of Sperry Rand, New Holland, Pennsylvania, is paying the expenses of the regional winners in the NVATA Agricultural Career Orientation Award Program.

United States Steel, Pittsburgh, Pennsylvania, sponsor of the NVATA Outstanding Young Member Award Program, will sponsor winners from Regions I, II and III. Competition in this contest is limited to vocational agriculture teachers who have taught five years or less. U.S. Steel probably will sponsor the contest in Regions IV, V and VI in 1969 and may even do so in all six Regions.

Three other vocational agriculture teachers will be going to Dallas to claim $500 checks as advisors of the national winners of FFA Foundation Awards in livestock, dairy and poultry Farming. These awards are made annually by Charles Pfizer and Company of New York.

L. L. Cunningham, "A Man with a Message," has been engaged as the speaker for the "Special Program" scheduled at 1:15 p.m. on Saturday, December 7. Mr. Cunningham is former Director, Physical Education, Notre Dame University; Major U.S.-A.F., World War II; Salesman, Sales Director Instructor Sales Training Courses; Former Sponsor and Instructor, Dale Carnegie Courses; and former owner and President, Business Institute of Milwaukee.



Dr. Forrest Bear, University of Minnestota, teaches a student to weld by using a sign written in Portuguese at the University of Parama, Brazil. (Photo by Harry Kitts, Universiy of Minnesota)

Vocational agriculture students in Illinois learn to weigh steers properly in order to calculate feed conversion ratio. The students are assisted by a feed company representative. (Photo by Paul Hemp, University of Illinois)

Stories in Pictures

GILBERT S. GUILER
Ohio State University

Agricultural education students gain practical experience in calf feeding and management at Andrews University, Berrien Springs, Michigan. (Photo by Neil O. Snepp, Michigan State University)

AGRICULTURAL EDUCATION

Agricultural Education

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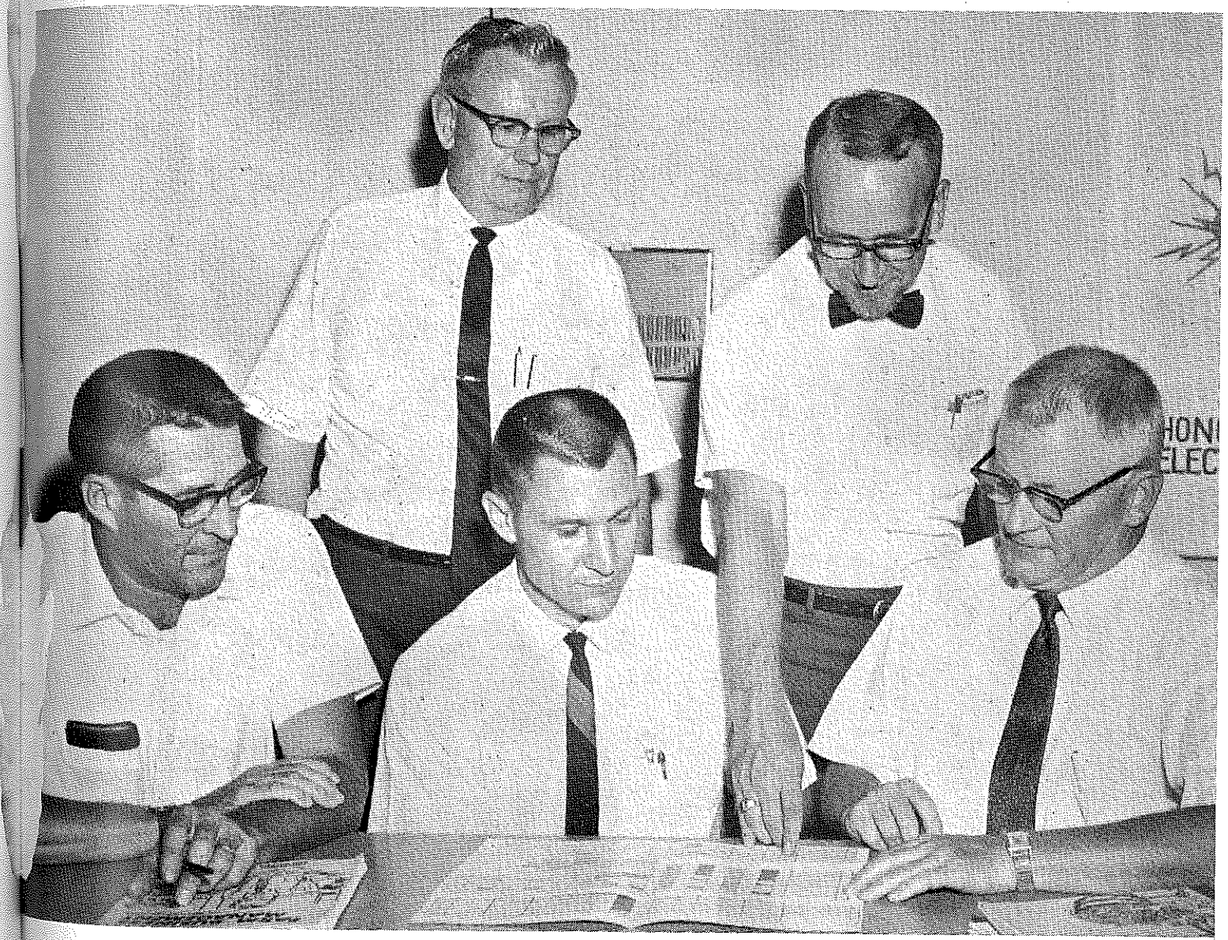

Featuring —
TEACHER EDUCATION

Also —
What's Ahead in 1969? *by H. M. Hamlin*
Vocational Education Amendments of 1968