Stories in Pictures

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The video tape recorder is used to record and play back classroom presentations of student teachers at the University of Missouri. (Photo by Gene M. Love)

Students at the Agricultural and Technical College, Cobleskill, New York, receive instruction in the proper method of cutting beef. (Photo by Howard Sidney)

Featuring — PROGRAM PLANNING AND CURRICULUM DEVELOPMENT
Some Dimensions of Curriculum Design

It is a good bet that most undergraduate and graduate courses in agricultural education on curriculums develop primarily on three major concerns: the selection of content (subject matters), sequence and grade placement of subject matter, and the allocation and distribution of instructional time to the various units, topics, or subject matter areas comprised the curriculums. This statement, in essence, conveys that the major concerns in curriculum development must have to do with "what to be taught" and "when it is to be taught." But are these "what" and "when" questions sufficient for a sound approach to curriculum development? I propose that there are two additional questions concerning the curriculum matter which have a profound effect upon how one answers questions about content, sequence, and the allocation of instructional time. The first of those questions is "what is the purpose of agricultural education?" The second is "what is the nature of the learning process?" Do not these "why" and "how" questions provide the context within which the "what" and "when" questions can be answered best?

Let's examine two curriculum development practices in agricultural education in light of this question. A long standing principle of curriculum development in high school programs of vocational agriculture is that educational programs should be based on and derived from the needs, problems, and aspirations of individuals in local communities. Such an orientation to the selection of subject matter implies rather clearly that the central focus of education has to do with people—their needs, aspirations, and developments—rather than subject matter per se. In accordance with this tenet of curriculum development, courses of study derived from textbooks or even outside sources of study are not appropriate. On the other hand much discussion during the past few years about necessity of population and national and state manpower needs seems to indicate that

(Continued on next page)

Look to the Future

To look forward intelligently is the key to the development of curriculums in agricultural education. To assess the issues and trends of today and tomorrow, to determine the qualifications that responsible agricultural leadership demands in these times, and to learn how to cultivate such qualities in young men and young women are the proper tasks of vocational agriculture if it is to offer an educational program modern in its content and adequate in its scope.

How far have we come? What have we achieved? First, there have been many fundamental changes in the programs being carried out in vocational agriculture departments across the country. Objectives have been changed, more electives are available, and students may specialize in one or two areas of content. Increased enrollments in the high school are being put on people and how to work with them.

(Continued on next page)
more emphasis on state, regional, and even national planning of educational programs is appropriate. The fact is that local, state, and national funds are being cut. But regardless of the base from which we are projected, curriculum developers in agricultural education should continuously remind themselves that the subject matter is conditioned by the purposes for which the subject matter is to be used. Over the years vocational agriculture's philosophy of reorienting curriculum and course sequencing has depended on updating the development of the people. We should insist that this principle is not overlooked with increasing emphasis on state and national needs as criteria for determining curriculum content.

A second example illustrious well the relationship between the tasks of content selection and sequence and the question relating to the nature of the learning process. The analytical procedure—identifying what people do in the world of work—is used frequently in vocational agriculture as a procedure for selecting curriculum content. Basically, this practice implies that learning is more effective when the learner's meaning, function, and utility to the subject matter taught. Yet curriculum makers fail frequently to see the relationship between sequence of content and effective teaching. How often do we see courses of study where the first topic in a unit on operating gasoline engines is the history of gasoline engines? Why is it that one of the first things taught in livestock selection is history of the breed? If we wish instruction to be meaningful to students, why begin units of instruction with a topic that has little if any relevance to that content? The fact often overlooked in building courses of study is that sequence and organization of content are closely related to the nature of the teaching-learning process.

The “what” and “when” questions pertaining to the selection and sequence of subject matter cannot be answered adequately unless they are considered within the broader context of questions pertaining to the purpose of agricultural education and the nature of the learning process. I suspect we frequently overlook or ignore the “why” and “how” questions when developing curricula in agricul-

tural education. —JRW

Guest Editorial . . .

task. We must develop vocational agriculture at an on-going program for the building of responsible leadership. In addition, the following need to receive special attention in the immediate future.

First, the image of agricultural education that undergirds vocational agriculture is all important. As others see us in our image. It has immense impact on the entire curriculum. Quality of both program and product are fundamental to this improvement.

Second, quality teaching personnel is crucial. Teachers of instruction must be trained, placed, and retained. Empha-

thetic agriculture — particularly vocational agriculture — needs to provide an employment service for students who complete training. In a customary effort to provide occupational realism, we need to establish performance criteria for instruction and describe students in terms of performance capability. There is little question but that vocational education needs to establish that a student is ready to enter the labor force when he or she has met certain standards. As described in the school’s course of study and the arrangement of the classroom, the teacher organizes a functional system for locating positions of employment, studying job descriptions and making notable placements of graduates the sooner we will be offering more valid programs of occupational education for agriculture.

Performance Capability

A requirement of a systematic employment effort will call for the description of our graduates in terms that make sense to the employer. A secretary already well into an era when the home from no longer provides an employment haven for graduates. The sooner we organize a functional system for locating positions of employment, studying job descriptions, and making notable placements of graduates the sooner we will be offering more valid programs of occupational education for agriculture.

Coffee Picture

Paul Patterson (standing), doctoral candidate in agricultural education at the University of Missouri, works with Harvey Smith, teacher and elementary school pupil in Kansas City as an agricultural careers teaching experiment. The purpose of the experiment is to determine its effectiveness for assisting students to learn about agriculture. (Photo by Gene Lee, University of Missouri)
Vocational Horticulture in a City School

Harry E. Wood High School, five blocks from Monument Circle, is located in the inner-city area of Indianapolis, Indiana. Because of its location the school faces all the problems of the inner-city. A large percentage of the school's students are enrolled in a general or college preparatory program, yet less than 30 percent will enter college or post-high school education. A frightening number of students drop out or fail. Vocational education has become one of the school's main tools for giving real meaning to education for many of the students.

Employment Opportunities
Indianapolis has an unusual need for horticulture workers. The southern portion of Indianapolis and Marion County was settled by families who grow a large amount of vegetables and flowers in greenhouses. Indianapolis has more golf greens per capita than any city in the nation. Also, workers are needed in such occupations as landscape crewmen, nursery workers, arborvitae workers, golf course workers, lawn service, park and grounds keepers, fruit and vegetable producers, food industry workers, flower shop workers, and garden center workers.

Program Development
The administration and staff at Harry E. Wood High School felt there was a need for horticulture in its program of vocational education. Proposals to establish a program in horticulture and four other areas of vocational education were submitted in the spring of 1967 to the Vocational Education Division of the Indiana Department of Public Instruction. In June 1967, funds for the establishment of programs for students with special needs were granted to the program.

A graduate of the Purdue University School of Agriculture with seven years experience as a farm manager and farm operator was employed to initiate the program and teach the courses. The newly employed instructor spent the first semester of 1967-68 becoming acclimated with the school and planning the program. He visited other schools with programs for students with special needs to gain ideas that could be used. An extensive visitation program was undertaken to observe vocational horticulture programs in Indiana and other states. The instructor spent much time with horticulture businesses in the Indianapolis area to get their ideas about the proposed program and the qualifications desired in employees.

The school had a small greenhouse which had been used by the science department. The greenhouse is now used for science and horticulture. A large locker room of approximately 1,500 square feet is being used as a classroom and shop. An extensive line of equipment was purchased including lawn mowers, snow removalers, spades, hoes, shovels, and many other small tools which could be used by the horticulture students.

Instruction
Students in the horticulture program are in classes three hours each day. This plan allows the instructor to teach two classes and have enough time to take short-educational trips to local horticulture businesses. The schedule also allows time to accomplish activities which develop occupational competences. The classes take care of the school grounds during the school year and are making large-range plans for landscaping the school grounds.

In addition to the school and home-centered experience programs, a work agreement was made with the Indianapolis Park Department to take students to the city parks for actual work experience. The city parks proved to be very satisfactory laboratories. The students enjoyed doing a job which would result in something they could be proud of.

The school's administrative staff decided that students could receive a science credit by taking vocational horticulture. The program was expanded in all biology classes and a student assembly program was conducted to introduce each of the new vocational areas to the school to the entire student body. Thirty students indicated an interest in the horticulture program. It was possible to arrange schedules for thirteen of these students to take the first course during the second semester of 1967-68.

The students worked in the classroom and the greenhouse during the cold weather. One of the class projects was to distribute and care for potted plants in as many of the classrooms as possible. As soon as the weather permitted in spring, students moved outdoors to the school grounds to pick up trash and clean the lawns. The class pruned all the shrubs and removed dead material. All of the lawn was stirred and some portions were reseeded. The students enjoyed learning to operate lawn mowers, trimmers, and other equipment on the school grounds.

With the use of work study funds, the students were offered jobs with the Indianapolis Park Department for the summer. This program allowed a student to work under the supervision of a school representative and his employer. Students were able to earn some of the money needed for school expenses. Five students chose to take part in the work study program during the summer of 1968. Most of the students are being offered jobs when they become eighteenth.

Future Plans
Plans are being made to expand the horticulture program by adding more teachers and facilities. Search is underway for space for a field laboratory to grow shrubs and flowers including demonstration plots. It is felt that this will show students, parents, and others in the community how to have green grass and shrubs around their homes. In addition, the home economics students are being developed for demonstration homes to show what can and is being done to provide urban beauty.

Many of the horticulture business associations are helping to develop the program. Although the horticulture program at Harry E. Wood High School is small in comparison to its potential, the direct benefits are already evident. Students overlooked by previous programs are being prepared to enter the world of work.
Family-Centered Adult Education Programs

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As our nation enjoys economic prosperity, the need to educate the poor and disadvantaged has become a more urgent task. This segment, labeled as the economically disadvantaged, is not sharing in the prosperity of our country partly because the nation's educational system has not adequately prepared them to share in it. Nearly fifteen million of these economically disadvantaged people live in rural areas that are presently being served by schools that offer instruction in agriculture.

Obligation and Challenge

It is the professional obligation of teachers of agriculture to attend to some of the special educational needs of these people. The task of helping them meet the educational needs of rural disadvantaged families lies squarely on the shoulders of local teachers of agriculture for the following reasons: the agricultural occupations department is committed to serve the entire school community, both adults and youth; teachers of agriculture are aware of the importance of occupational training in high school and post-high school education; and teachers of agriculture are usually the only members of the school staff who are familiar with the home situations of a large number of the rural families in the school district.

To meet this challenge, teachers of agriculture must place more emphasis upon working with disadvantaged families as faculty units. Also, considerably more time than is now being spent must be devoted to working with family members at their homes rather than only in group meetings at a school. A new look is needed in adult education programs to meet the needs of the economically disadvantaged.

A project was initiated at the University of Illinois to study the characteristics of economically disadvantaged rural families and develop methods and materials for an effective, locally oriented, family-centered educational program for rural disadvantaged families. The educational program is being designed so it can be implemented by local teachers of agriculture. In this article, the project will be described as "Project RSY."[5]

Individual Instruction

It was found that rural economically disadvantaged persons were usually social isolates who did not join organized groups and attended very few meetings. Thus one of the best ways to reach economically disadvantaged families was through individual contacts made at their homes. Teachers of agriculture were found to be the most qualified teachers in a school system to teach these people through this method. Instruction in the homes of these families was important in that it was conducted to the family and not just the child. Studies show that the chief molding influence on a child is his home life. Only by changing his home environment can we hope to have a lasting influence on the child. During Project RSY it was found that disadvantaged families responded very well to home instruction. Contrary to the initial fears of the teachers of agriculture, these families were very receptive to a person who exhibited interest in them and their children. The economically disadvantaged had few friends or visitors and were very appreciative when someone from the school was interested enough to come to their home and talk with them. As one teacher commented, "This is the first time anyone from the school ever came by except when one of the kids was in trouble at school."

Group Instruction

It was also found that economically disadvantaged families would eventually respond well to group meetings that were structured to their needs. The problem was getting them to attend these meetings. Economically disadvantaged persons were usually embarrassed when person-to-person contact was made.

Comprehensive Training

Nurserymen were of the opinion that students needed comprehensive training in the following competencies: identification of plants; identification of plant diseases and insects; propagation of plants by cuttings, seeds, grafting and budding; selection of soil for horticultural practices: lawn care and maintenance; planting and pruning ornamentals properly; and forcing plants to bloom.

General Training

A general degree of training was recommended by the nurserymen for the following competencies: controlling weeds in horticultural crops; digging, pruning and transplanting ornamentals; growing house plants in the greenhouse; growing vegetable plants for the competitive market; caring for cut flowers; arranging flowers; growing bulbs and corms; growing annuals and perennials; soil sterilization; composts and manures; mixing soluble fertilizers; potting seedlings, and raising house plants in the greenhouse and nursery.

Horticultural mechanics, basic landscape, land surveying, business techniques, operation and maintenance of engines and machinery, and interest in tools' work were also competencies and attitudes suggested by the nurserymen.

Family-Centered Adult Education Programs

They attended 'middle-class' meetings. They had learned to avoid all meetings and often were suspicious of all educational programs. They expected much patience and persistence on the part of the teacher. Good rapport had to be developed between the family and the teacher before they would attend meetings. Such rapport had to be developed through continuous individual instruction.

Even after much work through individual instruction at the home of a family and obtaining a commitment from them to attend a meeting, the family did not always attend. When asked why they did not attend, the family members responded with a number of rationalizations. Some of the more common reasons given were: A member of the family was sick; roads were too muddy; had to work late, or just forgot the meeting. These reasons may have been perfectly legitimate in the value system of the disadvantaged families. Much effort is required to change these attitudes. The teacher did not despair when success did not come easily. He became increasingly dedicated to the service of these people.

Once they attended a meeting and realized that some of their specific problems were being treated, they developed an interest and began to participate freely. They were willing to discuss the problem when they understood that other families at the meeting were in situations similar to theirs. The sympathy of their problems and their desire to solve them gave impetus and direction to the program.

A few families did not attend a meeting after working with them individually for over twelve months. But all families, including the ones who did not attend a group meeting, benefited from a well-planned educational program of coordinated group and individual instruction.

Summary

Teachers must work with individual families through home visits before a group meeting program can be started. The group meeting programs should be structured to help solve the immediate needs of the families. The structure of the group meetings should not be too rigid. Instructional material should be simple. It is necessary for the teacher to meet with each individual family after each meeting and help the family apply the teaching to their specific situation. It is especially important to carry the instruction to the families who do not attend the group meetings. Even families who refuse to attend meetings welcome individual instruction and seek advice from the teacher.
Pre-Employment Laboratory Training in Farm Power and Machinery

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and
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What do you do when you live in a community where the average farmer has a gross income in excess of $50,000 but chooses not to buy a tractor repaired as quickly as needed because the implement dealer cannot hire enough good mechanics? Are the schools really meeting the needs of students and the community?

These are only two of many questions that vocational agriculture teachers face today. We are aware that all students enrolled in production agriculture will not become farmers. Most vocational agriculture students have benefited from studying vocational agriculture whether or not they are now or plan to be engaged in farm employment in the future. What about those students whose needs are not met fully by production agriculture? Isn't there something that can serve better our students and the community?

New Program

The Dimmitt, Texas, schools developed a new program in vocational agriculture in response to these and similar questions. First, an occupational survey of the community's immediate and projected needs for farm machinery mechanics was made. A study was also made of the school to identify the resources available for a new program. The result was a request to the State Director of Agricultural Education for approval of a new vocational agriculture program termed Pre-Employment Laboratory Training in Farm Power and Machinery. The major objective of the new program is to prepare farm machinery mechanics in the community competence in the principles of mechanics, mechanical helpers, and machinery repairmen.

Instruction

Instruction in farm power will be used to illustrate how the program in Pre-Employment Laboratory Training in Farm Power and Machinery is organized and operated. In teaching farm power, our intent is to teach each student the fundamentals of engine operation and machinery. Safety and the proper use of tools are stressed.

Instruction at the beginning of the school year includes units on history of engines, shop safety, and tools and equipment used. When actual work on engines is started, demonstrations must be used to teach overhauling. Small gasoline engines are excellent to use in the beginning because of their size and the fact that the basic theory is the same as in larger engines. After an in-class overhaul is completed, each student should individually overhaul a small gasoline engine.

At the completion of this project, another in-class overhaul using a tractor or irrigation engine should be made with the students working in a group with the teacher. Additional instruction in theory would be provided also. This should be followed by shop overhaul with one engine for each two students. Engine work is obtained from farmers or implement dealers with the agreement that the owner pays for the parts needed. During this phase of the instructional program the teacher should work with students on an individual basis providing demonstrations and assistance as necessary. Groups of students should be called together for special demonstrations and instruction when unusual and interesting situations are found. Each tractor or engine should be completely reconditioned and painted before leaving the shop.

Administration

The Texas Education Agency has set minimum standards for Pre-Employment Laboratory Training Programs. Standards are set for tools, equipment, and space. Teachers must hold a valid teaching certificate for vocational agriculture. To be eligible for enrollment in the program, students must be 16 years of age, be in grades 12 or 13, and have a required objective in the area of farm power and machinery. Students must spend a minimum of three hours per day in the shop.

As more and more schools develop programs of this nature there is a need for colleges and universities to provide special pre-service and in-service courses to prepare teachers for these programs. Three-week institutes for teachers in tractor mechanics and machinery service and repair are conducted by universities in Texas each summer. In addition, we find that most mechanics are happy to give advice and recommenda-tions to teachers involved in Pre-Employment Laboratory Training in Farm Power and Machinery.

The teaching of knowledge and skills in agricultural occupations can be tremendously facilitated through the proper use of appropriate instructional materials. An ever-expanding field of agricultural knowledge recreates teaching procedures which expedite both the teaching and learning process.

Effective Teaching

Using instructional materials does not necessarily result in effective teaching. Effective teaching is not easily defined; it is an elusive concept. Effective teaching is dynamic. It unfurls what is to be learned in a manner that is readily understood by the learner. Instructional materials contribute to effective teaching. They enrich and accelerate the learning process by applying to as many of the senses as possible—sight, sound, touch, smell, and taste. Reliance upon verbalism is reduced to a minimum.

Teachers need to be thoroughly acquainted with instructional materials and how to use them. Effective use of instructional materials is predicated upon more than merely projecting something on a screen. There must be preparation and follow-up. Handouts and other instructional materials should not be used as substitutes for instruction. It is essential that these materials facilitate the educational process? Should be asked and satisfy the learners.

Instructional materials, whether published, motion pictures, transparents, models, specimens, or charts, do not replace the teacher's work. Class preparation time may actually increase as will expenditures from the school budget. Additional preparation time and expenditures are justified when learning is more energetic, vigorous, forceful, and real.

Using Materials Effectively

Teachers must decide what instructional materials to use and when to use them if maximum outcomes are desired from teaching. Proper instructional materials are appropriate and meaningful. Appropriateness also relates to relevance of time. The effectiveness of appropriate materials can be greatly diminished by using them at the inopportune time. Meaning is enhanced by timing. Using a motion picture on the irrigation of corn would certainly be more meaningful if shown when corn irrigation is actually done rather than when studying corn varieties.

The manufacturers of educational equipment have made tremendous advances in technology. Improvements have been added to their innovations by increased funds for instructional materials. Therefore, Teachers and students have been asked to investigate thoroughly the educational worthiness of new materials before purchasing them. The question is often asked, How are these materials efficient and effective? Should be asked and satisfy the learners.

Instructional materials should be reviewed in the classroom for only one purpose— for more effective teaching and learning. Greater and more permanent learning comes about in a shorter time when proper use is made of instructional materials.

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INSTRUCTIONAL MATERIALS AND EFFECTIVE TEACHING

The AGRICULTURAL EDUCATION MAGAZINE
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167
The use of electricity on farms in the United States is increasing by 8 per cent per year. Today many farms are almost entirely electric. No one can disrupt the role played by both private and public electrical industries in modern farming. Because farmers have adopted many electrical labor saving devices, a study was undertaken to identify the competencies in electricity needed by farmers.

Competencies in Electricity Needed by Farmers

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Harry J. Housman

What Happens When Traditional Programs Are Not Appropriate?

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Phoenix, Arizona

Richard T. Meier

I imagine many vocational agriculture departments are experiencing changing patterns in one way or another. It is not entirely true with agricultural education in a city school. What happens when the traditional program no longer meets the needs of students? Do you change the program, maintain the status quo, or change jobs? Do you discard the old program, keep portions of it, or return to school and retool yourself and the program?

NEED FOR TRAINING

It is evident from the study that farmers desire more training in electricity. They also really want to learn more about the understandings and abilities listed in this article. Farmers indicated little interest in instruction pertaining to the ability to figure an electrical bill from the kilowatt-hour reading or the ability to tell an Underwriter's Know.

- The City

My department of vocational agriculture is located in a school in the northwest section of Phoenix, Arizona. Over 90 per cent of the land in the school district is occupied by homes and small non-agricultural businesses. Many persons would enumerate that our school should not offer agriculture, or at best only horticulture or landscaping. We have a one-man department of vocational agriculture in a school with 2,000 students, none of whom live on a farm or ranch. Excellent in agriculture is fairly tall at approximately 65 boys and girls each year.

I decided on the summer job but to complete additional graduate work and develop a program of agricultural education suited to the school and its students. The program we are operating is described in this article. All courses described are taught as semester courses.

- First Year

A two-semester exploratory course is open to all freshmen. Enrollment is limited only by the students' interest and the number of chairs in the classroom. Approximately 35 students enroll each year. Horticulture and landscape areas of vocational education are open to seniors who have completed at least one year of prior instruction in agriculture. From 16 to 18 students are selected for this program. Students usually are juniors and seniors or freshmen. Some students are trained in a school or at home, others work in garden centers, feed lots, agricultural machinery, dairy industry, etc.

My teaching load for the entire program is three 50-minute periods each day with two 48 minutes for coordination and supervisory visits.

- Fourth Year

I teach a two-semester course called Agricultural Cooperative Education. The course, structured similar to cooperative programs offered by other areas of vocational education, is open to seniors who have completed at least one year of prior instruction in agriculture. From 16 to 18 students are selected for this program. Students usually are juniors and seniors or freshmen. Some students are trained in a school or at home, others work in garden centers, feed lots, agricultural machinery, dairy industry, etc.

- Second Year

Agricultural Mechanics I is offered the first semester. The course is taught by our industrial arts meat shop teacher who is also a certified vocational agriculture teacher. This semester contains a shop by two teachers and the necessity to offer two programs. Work connected with 150 hours is required. Supervised farming programs are optional. Experience on the land laboratory, in the greenhouse, and in animal care is described in this article. All courses described are taught as semester courses.

- Third and Fourth Year

One-semester courses on Agricultural Science II (Field Crops) and Economics of Farming are taught on alternate years. Requirements for work experience are expanded to 200 to 300 hours. Eligible programs may be used in lieu of work experience providing students meet minimum standards. I teach these courses.

Agricultural Mechanics II and Agricultural Mechanics III, both one semester courses, are taught on alternate years by the industrial arts teacher who is certified to teach agriculture. The content of these courses is modified to meet the needs of the local situation.

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A Comprehensive Vocational Agriculture Program

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In keeping with the trends in vocational education, many high schools across the nation have changed or are in the process of changing the vocational agriculture curriculum. Change has occurred both in subject matter and in curriculum design. Vocational agriculture departments that do not effect such a change may become obsolete in the near future.

NEED FOR CHANGE

As a result of studies that began in 1960 at Portland (Tennessee) High School, school administrators, vocational agriculture teachers, the guidance counselor, and members of the community council found that a more comprehensive instructional program in vocational agriculture was necessary. Realization of several factors brought about such a change. First, many high school programs have fallen behind the requirements of the "world of work," particularly in schools with a small enrollment such as Portland High School. Second, many students were inadequately prepared for employment in careers consistent with their interests, abilities, and opportunities. Third, the vocational agriculture program needed to be expanded to include work in production, distribution, processing, assembling, servicing, and in some cases commercial and professional careers. Finally, with rapid technological change in agriculture and education, the vocational agriculture program had simply become "out-dated." Because of these and other factors, a new approach was taken in planning the agricultural education program. The curriculum was patterned after the "block system" which included courses in agricultural science, basic agricultural mechanics, advanced agricultural mechanics, and a course designed for first-year agriculture students which is exploratory in nature. A course in agricultural marketing with cooperative education as an integral phase was added. The program was made available to all students with the content structured to meet as many individual needs as possible.

OBJECTIVES

The primary objective of the revised program is to offer a comprehensive instructional program to meet the vocational objectives of all students. Our aim is to develop students so they are competent to enter an agricultural occupation. Specific objectives are: to continue meeting the needs of those students with production agriculture objectives; to offer exploratory instruction in careers; to expand instruction in agriculture to include the distribution, servicing, processing, assembling, repairing, and marketing of supplies and products; to improve mechanical skills through the use of trade craftsman as special teachers; and to offer instruction which will motivate potential dropouts to complete high school and qualify for employment.

PROGRAM PHASES

The vocational agriculture program at Portland High School is divided into four phases. All four phases are designed for the "block system" of instruction. The first phase is exploratory in nature and is offered only at the ninth grade level. Students may select all other phases in any year while in high school.

First Phase

Students in the first phase receive instruction in careers. An occupational interest inventory is administered to each student after which the student makes a detailed study in his highest ranking occupational area. Resource persons discuss careers, outlook for occupations, and requirements for occupations. Approximately one semester is devoted to exploratory study. The first phase also includes leadership training and planning for the proper use of supervised farming or supervised work experience programs. An introduction to the animal, plant, and soil sciences is also given. The first phase makes the student aware of his strengths and weaknesses. By determining interests and needs of students, plans can be formulated for future high school programs. The guidance counselor works closely with students in this phase of the curriculum.

Second Phase

Development of scientific attitudes toward agriculture continues in the second phase of the program. Students in the tenth through twelfth grades may elect this phase of the program. This phase is designed for students in production agriculture and other areas of agriculture in which a basic knowledge of the animal, plant, and soil sciences is essential. The curriculum is structured to emphasize principles which may be applied to any situation in production agriculture. For example, basic principles of fertilization of field crops are taught rather than fertilization of individual crops such as corn.

The following instructional units are offered in the agricultural science course: animal science—selection and judging, reproduction, nutrition, diseases and parasites, and management practices; plant science—soil formation, soil judging, fertilization, and erosion and conservation practices; plant science—rates and dates of seeding, fertilization, tillage practices, control of pests, diseases and weeds, and marketings.

Phase Three

In keeping with the ever-increasing mechanization in agriculture and related areas, phase three of the program is designed to develop marketable skills and basic understandings in agricultural mechanics. Basic principles are taught in the classroom prior to actual practice and experience in the shop under the supervision of the vocational agriculture teacher and a special craft instructor for each instructional area. Craft instructors are an integral part of the instructional team. They have at least fifteen years of experience in the area in which they serve as instructors. Since the vocational agriculture teacher cannot be proficient in all areas of the program, the special instructors are used to supplement the teacher's knowledge and skills in mechanics.

Phase three is divided into two courses—basic agricultural mechanics and advanced agricultural mechanics. Each area in basic agricultural mechanics includes instruction for the crafts. These instructional areas are carpentry, plumbing, electricity, oxy-acetylene and arc welding, and small gasoline engines. To make instruction more realistic and practical, a small building is constructed, wired, and the plumbing installed.

Advanced agricultural mechanics is designed to teach the principles of operation, repair, overhaul, and take-up of large gasoline engines and transmission systems. Approximately one semester of the year is spent in classroom instruction on fuel systems, ignition systems, and changing systems. Students are given practical experience the second semester by actual work with large engines.

Phase Four

Phase four of the program is agricultural marketing and cooperative education for eleventh- and twelfth-grade students. Students in this program enroll in marketing in the junior year and in marketing and cooperative education the senior year. Students are taught salesmanship, advertising techniques, the art of displaying merchandise, business of business, and business organization and policies, and how to secure a job. While the student is enrolled in the cooperative program during the senior year in approved training centers, he is also given individualized instruction in his particular area of interest.

OTHER FEATURES

In the process of securing employment for students in the cooperative program, students are made aware of approved training centers. Employers then interview prospective student-employees. The employers also are involved in evaluating the cooperative program and the students' performance. The supervised occupational experience program is in its third year of operation.

An advisory council consisting of eight representatives from industry and labor serves in a consulting capacity for the program. The council is given responsibilities such as identifying learning experiences, improving materials and procedures in the program, locating training centers for cooperative students, and evaluating the program.

The vocational agricultural program at Portland High School operated as a pilot program for three years. It is now operated as a regular program in the school. Many changes have been made, and certainly more revisions are likely in years to come. The teachers and others involved feel that the program has met and will continue to meet the needs of the community as long as needed revisions are made.
AN APPROACH FOR CONDUCTING RESEARCH ON AGRICULTURAL OCCUPATIONS

ROBERT W. RICHMAN
University of Idaho

Robert W. Richman is Assistant Director of the State Occupa- tional Research Unit at the University of Idaho, Moscow, Idaho. This article is based on research, "Study of Agriculturally Related Occupations in Selected Counties of Idaho," conducted by the State Occupational Research Unit at the University of Idaho.

Studies have rather consistently confirmed the need for vocational agriculture to expand to include agriculture-business, agri-service, and other special areas of agriculture. Although the extent of agricultural background may vary, it is nevertheless valuable as a background for entry into more advanced jobs. Agriculture is not a field for some highly trained technical skills, and its niche is a field in which all who may be interested in practical, productive occupations. This article is an attempt to describe agrarian occupations more effectively.

Background
The human being often speaks of business barometers, those statistical patterns of certain industries or goods which both describe and predict more general conditions. I propose we take that same approach in agricultural education to learn more about the needs in agriculturally related occupations.

One major reason for the popular optimism that agriculture is declining is the use of a faulty barometer. Census data concerning numbers of farm workers formerly served as an accurate index of agriculture. But as technology has produced complex agricultural processes and off-farm agricultural services, the census count of farmers has become a very poor measure of the opportunities in agriculture. A better occupational barometer is difficult to build and requires development of some new approaches.

An Approach
We desired to compare conditions in Idaho with research conducted elsewhere concerning off-farm agricultural occupations. We hoped to find among the studies certain consistent approaches which would make results comparable. But we soon found it necessary to refine research designs and procedures so that data would be directly comparable between states or areas.

Another refinement was to standardize an objective interview approach. The use of local vocational agriculture teachers as interviewers has the advantages but they are offset by greater or lesser disadvantages. Removing the obvious agricultural orientation of the interviewers gave better or more consistent information which was ultimately more useful to agricultural education. The alternative selected was to use vocational counselors as interviewers. They have adequate familiarity with agricultural terminology and activities as well as knowledge of non-agricultural work. Furthermore, they bring in use casual and unscheduled recording of data and their experiences are less standardized but related interview manner.

Findings
From a population of some 3,000 businesses in four representative areas of the state, a stratified sample of over 200 interviews was conducted. The data identified some 250 agrarian occupations in 85 different types of businesses. These occupations fell within three categories: highly agrarian, moderate agricultural, and agricultural support.

Continued on page 275
Curriculum Change: A Continuing Challenge

C. O. LOESER, Teacher Education
Washington State University

There is an air of urgency throughout the educational system in reshaping and expanding vocational-technical programs in agriculture. Indeed, this is not merely a concern for those in the classroom; it permeates the whole structure of education from preschool through higher education. The Vocational Education Act of 1963 and the Vocational Education Amendments of 1966 give new freedom and greater responsibility to vocational education. The legislation gave new direction and the opportunity to expand. There was need immediately to re-evaluate present programs and to plan new ones.

Complex Process

To understand more fully the scope of the task in revising programs in vocational agriculture in secondary school, one needs to be aware of the complexities of curriculum revisions. To know the objectives of secondary education is important. A well-planned curriculum in agricultural programs will include specific objectives which contribute to these objectives. One must be especially cognizant that the controlling purpose of vocational education is "to fit persons for gainful employment" (emphasis on the word "fit"). The specific objectives which have been established for vocational and technical education in agriculture.

There are many other forces that influence curriculum development. Legal and regulatory factors, economic trends, and national need to be considered. State curriculum guides, college entrance requirements, and the needs of the economy are but some of these factors which influence the curriculum development. The change brought about by these forces and the need for new and improved courses must be part of the curriculum revision. These forces are constantly changing and leadership to meet these needs is necessary. Curriculum staffs must constantly evaluate the effectiveness of their programs in meeting the needs of the students.

Curriculum Revisions

Over the past six years major curriculum revisions have been undertaken in a wide range of subjects have been undertaken in the United States. Nebraska and Evans wrote that this is a trend begun at least five years ago and will continue to be a trend of increasing magnitude. It has been observed that the major thrust of the emphasis on modern agriculture is the need to make agriculture education more relevant to the needs of the students. The emphasis on modern agriculture is the need to make agriculture education more relevant to the needs of the students.

Specialists in agriculture and education at universities and colleges can contribute also. Summer school courses, workshops, conferences of teachers, administrators, and superintendents in agriculture and other educators are also contributing to the curriculum development.

There is widespread and vibrant interest in curriculum revision. Lay groups, sociologists, and psychologists as well as foundations and government agencies are all of these sources. The main purpose of this discussion is to bring about an understanding of the need for change in the curriculum to meet the needs of the students.

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Teachers of agriculture must be involved in planning and initiating curricu-

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Continuing Process

However, it takes time to develop and revise a curriculum. The School Mathematics Study Group embarked on a revision over a six-year period. It has since been expanded to nine years. So it would be well to take the advice of Dean Sizer of Harvard who wrote, "Since curriculum development is a long-range continuing process, many of the key men involved must be those whose careers are largely devoted to it. The task is too difficult to leave completely to the biosynthetic professor or the part-time worker."

It is encouraging that many of the best minds in several academic disciplines, some of our most talented and experienced teachers, are participating in the process. The systems are anxious to devote time and effort to the complex task of curriculum development. Because it takes time to revise and develop a curriculum, it is also encouraging that many curriculum dis-

An Approach for Conducting Research on Agricultural Occupations

Perhaps the most valuable finding is that as middle group of occupations with moderate agricultural relationship, it is in this category that useful "Indicator Occupations" were identified. Such basic agricultural categories provide a base for developing "occupational barometer." The findings also suggest that the objective of future research studies should be to identify which occupations among a standardized list are important to agriculture in the area studied. This would simplify future surveys and make it possible to coordinate data throughout a region.

Another consideration in coordinated research is the finding that the indicators of agricultural occupations include a specialty agriculture group. This refers to the fact that these occupations require intensive knowledge limited to one of the four common areas of agriculture. Persons of this kind need extended training in agricultural products or services with a secondary duty of communication. Such diversified work requires considerable public contact may be primary. Our evidence suggests curricula which cross several vocational fields. This is a realistic program to be an effective program. We must test it to be an effective program.
Occupational Education in Agriculture

GENE BACH, Director
Vocational Agriculture Department
Muskegon, Michigan

Instruction in Heavy Equipment Operation

J. ARTHUR PETERS
Bradford, Vermont

At the time this article was written, J. Arthur Peters was Teacher of Agriculture, Bradford Academy, Bradford, Vermont. Peters was named Principal of Bradford Academy in 1968.

The program, now three years old at Central High School (Muskegon, Michigan), is paying off three-fold. The enrollees are gaining practical experience in the business world, they are earning money, and businessmen cooperating in the program are enjoying services from youth who are dedicated to their part-time jobs. The program is a pilot project which we have designated Related Agricultural Occupations.

The Program

The program includes special classroom instruction from 7 a.m. to 8 a.m. daily. After the Special Related Agricultural Occupations class, students attend the regular courses and then spend the remainder of the day and all day Saturday working in business firms that are related to the agricultural industry.

The Related Agricultural Occupations class is designed to involve students in learning sales techniques and good business procedures in jobs related to agriculture. These are basically the same techniques and procedures used successfully in any type of business operation. We are attempting to produce qualified employees who can step into management and ownership positions in the future.

All students presently enrolled in the pilot program are members of the FFA Chapter. The program is open to juniors and seniors who have had one or more years of regular vocational agriculture. Although the Related Agricultural Occupations program has been in operation for only three years, the vocational agriculture department at Central High School has conducted a successful job-related program in vocational agriculture since 1938. The earlier program, like the present one, never failed to stimulate the interest and cooperation of the local business community.

Teaching and Instructional Materials

The special course for students in the Related Agricultural Occupations program is taught by the regular staff of the vocational agriculture department. A typical class session may simply cover ideal ways to wait on a customer or may move into the more complex field of business management or the psychology of human behavior. The students study in the classroom and take what they learn to their jobs. In turn, they encounter on-the-job problems and come back to the classroom and discuss the problems and seek solutions as a group. Individual students are assigned specific job-related presentations for discussion in the classroom. The result is a teacher-student-employer relationship which is satisfying to all participants.

Instruction in heavy equipment operation was added to the course in Forestry, Conservation and Outdoor Recreation at Bradford (Vermont) Academy in 1967. Since nearly a year of advance planning was necessary, we hope that our experience can be of value to other teachers interested in this area of instruction.

The problems involved in initiating instruction in heavy equipment operation seemed to fall into the following four areas:

- High cost of the equipment, both the original cost and operating costs.
- Relatively short length (ninety minutes) of class periods for instruction.
- Operating skills involved; I had had no previous experience in heavy equipment operation.
- Student safety including accident and liability insurance.

In spite of the problems involved, there were several factors favoring the establishment of the new program. We had a 128-acre school forest that could serve as a working area. The school board, superintendent, and principal were very cooperative. And there was a high degree of student interest.

Equipment

The hardest problem to solve was the cost of equipment. Requests for cooperation sent to major equipment manufacturers invariably caused back with the name of the nearest dealer. Local dealers usually indicated that they could only provide used equipment without an operator for the regular rental rate. The State Highway Department indicated that they might be able to rent equipment through their local district on the same basis as equipment was readily available to towns. A local contractor was willing to provide equipment with an operator during a slack period for a total cost that was less than the cost of renting from local dealers or the State Highway Department.

The local Soil Conservation District offered to provide a bulldozer with operator for $2.00 per hour plus a moving charge and fuel cost for use during the slack fall or spring work periods. Both the local contractor and Soil Conservation District indicated they would require at least a six-hour working day. School administrators agreed that all students in the instructional program could be on-the-job for the entire school day for a maximum period of one week. A substitute teacher was employed to teach our other classes during school days that could be devoted to this special project.

Instruction

Using regular operating instructors and working with them as both a coordinator and an educational supervisor, I solved the problem of any lack of experience in heavy equipment operation. Students were provided with hard hats and required to have special accident insurance. It was felt that this job the liability insurance normally carried by the school district would cover accident and liability problems in a reasonable manner.

The program was developed and operated for one week in the school forest area on a budget of $350.00 for a class of six senior students. Each student received 30 hours of bulldozer operation time, the hours of power shovel operating instruction, and 18 hours of dump truck operating instruction.

Outcomes

As a result of the instructional program, the following improvements were completed in the school forest area: a new 1/4-mile entrance road was roughed out, graded, and gravelled; a culvert was installed under new road; large stumps were removed from 1/2 acre one-half mile new logging road was constructed; and two typical camp sites were cleared, graded, and gravelled.
The area comprising the Northern Burlington County Regional School District is approximately 100 square miles. Farming is still of prime importance since there are no large industries or cities in the school district. A program in agricultural production includes the competencies needed for employment in the district at the present time. However, farmlands have been converted to home construction and recreational purposes. To meet the changing needs of the district, an instructional program in horticulture was started in 1966-67.

Generally the major objective of the horticulture program is to develop competencies needed for employment in horticultural jobs and to prepare students to continue their education. Leadership development through the FFA is also a major objective of the program.

Facilities

Funds provided by the Vocational Education Act of 1963 were used to construct a 120 feet by 25 feet greenhouse, 420 square feet, by 30 feet, and a 37 foot by 25 foot greenhouse, which is included in the greenhouse. It is used as a classroom, storage area, work area, and workroom. Some plant benches in the greenhouse are available for students for individual experiments, but a major portion of the benches are used for commercial crops. The heating system is separated from the greenhouse as a safety factor. The heating system is used as an instructional aid when the care and operation of greenhouse heating systems are discussed.

Another often overlooked instructional resource is the school grounds. Since the greenhouse was not available for teaching in 1966-67, the horticulturist students landscaped the school grounds. The landscaping is not completed so other classes will be able to continue the project. In addition, the teen and shrubs already planted will continue provide practical learning situations for students.

Program of Instruction

Students meet seven periods a week, three periods and two double periods. Single periods are used for films, notebook assignments, lectures, and discussions while double periods are used for practical work.

The first year is devoted to general horticulture. Insects, plant diseases, propagation, soil, plant growth, and an introduction to greenhouse structures are the primary units discussed. PFA and parliamnetary procedures supplement the first year program.

The second year is also devoted to general horticulture but a greater emphasis is placed on horticultural mechanics. The building of fences, patios, walls and trellises is discussed and then constructed during laboratory work. Greenhouse construction is discussed including structural materials, ventilation, heating, cooling, and lighting of crops grown in the greenhouse.

After two years of general instruction in horticulture, students are encouraged to pursue a course in floriculture or ornamental horticulture, or both. The floriculture course provides instruction and experience in management of greenhouses, plant culture, insects,SO on. Insects, fungicides and plant viruses are included. Students plant and grow crops in both greenhouses and outdoors. The public can see what is being done once the projects are held outside the classroom in the school community. This in itself adds to the program. Occasionally having an outside class and improving the school's appearance while learning were unique experiences.

The ornamental horticulture course includes instructional units such as nursery practices and business management, plant identification, insects, nematodes, fungicides, pruning, root weed control, pest control, transplants, landscape design, lawns, wholesale nursery operations, and retail garden centers are also studied. Shop projects based on land use and idle land are a part of the instruction as well as maintenance of the practical work sessions.

Evaluation

The horticulture and floriculture program is in the third year of operation. The second year the classrooms and greenhouses were available. The new facilities have increased student morale and enthusiasm. The equipping of the greenhouse delayed some of the cropping plans, but chrysanthemums were ready for Christmas, and daffodils for Valentine's Day. Cut snagemums for early spring, tomato and bedding plants for spring, and perennials for Memorial Day. Most of the plants were sold to individuals and local businesses. In addition, a sidewalk to the entrance of the greenhouse was constructed by the students.

Landscaping of the school grounds has continued. This project has the avid support of the P.T.A. which continues to operate as a means of raising funds for projects. The project is now beginning to slow down.

The public can see what is being done once the projects are held outside the classroom in the school community. This in itself adds to the program. Occasionally having an outside class and improving the appearance while learning were unique experiences.

Employment Opportunities

The firm employed 685 workers in 58 different job titles. Over 56 percent of the firm were engaged in cultivating and servicing functions, farm equipment and equipment, dairy production, crop spraying, and grain work. Operations were the major products and services of the agriculture firms.

Most employees were male; 60 percent had farm experience. Employers indicated a need for 49 new employees between 1967 and 1970. There was an annual turnover of 143 persons in the 58 firms. Most employees left voluntarily because of part-time or seasonal work. Most employees discharged were for reasons of incompetence. Employers generally preferred and required high school graduation for beginning work.

What employment opportunities exist in the present and future in non-agricultural agriculture in business and industry? How willing are agriculture employers to cooperate in work experience training programs?

To answer these and other questions pertinent to present and future non-agricultural agriculture, I conducted a study of the agricultural firms in the county.

Maynard J. Irons

Vocational Agriculture Teacher

Minot, North Dakota

Implications for Program Planning

The following implications of the study appear to have relevance for program planning in local schools.

Most opportunities in agriculture are in the firms engaged in retailing, servicing, wholesaling, and purchasing.

-Farm machinery and equipment is a major product and service area in the agribusiness community. Emphasis should be placed in this area of the vocational agriculture curriculum.

-In view of the farm experience of present employees and the farm background of new employees, it is likely a demand for farm-oriented workers will continue to exist.

A farm experience background for employees in agriculture preferred by employers where the worker deals directly with the farmer. Women may have limited opportunities in non-production agricultural firms except as clerical employees.

Opportunities exist for interdepartmental cooperation between distribution and education, office practice, and vocational agriculture in developing agribusiness training programs.

Firms utilize means other than state or local agencies in seeking new employees. Students should be informed of these media.

Starting salaries are probably low because of lack of training. Properly designed and implemented training programs could possibly raise beginning wages.

Since a substantial proportion of agribusiness firms indicate a willingness to cooperate with the schools in training programs, a lack of training centers should not inhibit the development of new programs.

-Semi-skilled and unskilled workers comprise the largest segment of total workers, the largest group of part-time and seasonal workers, and the largest number of persons discharged or voluntarily leaving their jobs. A sound training program could give workers at these jobs a better job permanency and enhance their progress to higher job levels.

-Additional employment potential and the turnover of employees indicate a major need for job training and retraining.

-Since the chief reasons for leaving voluntarily are dissatisfaction with the temporary nature of the work and desire to change jobs, it appears that employees have a desire to improve their lot and may be receptive to training.

-Employers prefer informal on-the-job training of new employees in areas other than highly technical subjects. An opportunity exists for the school to provide training as a service to the business community.
COMPETENCIES NEEDED FOR EMPLOYMENT IN FARM MACHINERY DEALERSHIPS

ROY F. ECK, Teacher of Agriculture
Effingham, Illinois

There is a need for instruction in farm machinery technology. Vocational agriculture, particularly in vocational-technical schools and junior colleges, has a responsibility to provide farm machinery dealers with trained work- ers. The need to larger firms coupled with the demand for larger and more complex machinery has brought about an increased volume of business for farm machinery dealers. The demand for immediate delivery of new machines and for quick repair and servicing of old machines has increased the need for more skilled workers in the area of farm power and machinery.

On several occasions I have asked by farm machinery dealers to prepare studies for employment in their business. Recent need has led to study the competencies needed for gainful employment in the farm machinery dealership. Farm machinery dealers in six towns in Kansas were interviewed. Each dealer was asked to rate the importance of competencies as to whether each was essential, very important, important, of little importance, or not important at all.

The competencies listed below were considered to be important, very important, or essential for employment in farm machinery dealerships.

HYDRAULIC SYSTEM

1. Operate system efficiently.
2. Service system filters.
3. Service system valves.
4. Recognize the need for service or repair prior to proper trouble shooting procedures.
5. Repair hydraulic pumps.
7. Repair hydraulic cylinders.
8. Repair hose fittings.

TRANSMISSION AND DIFFERENTIAL

1. Measure and change gears in transmission and differential.
2. Install oil and gear seals.
3. Follow parts of power through the transmission.
4. Service transmission and differential gear.

MACHINE REPAIR

1. Weld efficiently in all positions with electric arc welder.
2. Read and follow directions in operation manual.
3. Weld and cut steel with gas welding equipment.
4. Determine maximum or minimum wear for replacement.
5. Operate hydraulic press with efficiency and safety.
6. Operate your precautions and take all precautions.
7. Disassemble a machine and reassemble it.
8. Measure, line, and identify parts for correct assembly.
9. Remove and replace water pump bearings.

SPECIALIZING TRACTORS

1. Test horsepower with PTO dynamometer.
2. Check engine, adjust, and repair fuel in- jectors.
3. Check hydraulic condition of the tractor.
4. Service tractor electrical system.
5. Service tractor steering system.

CONCRETE TECHNOLOGY — INSTRUCTORS GUIDE

CHICAGO, ILLINOIS: PORTLAND CEMENT ASSOCIATION


The content of this publication is as broad as the title implies. The fundamental principles of concrete are presented in language's language. Yet it has been designed to appeal to the crafts- man as well as the beginner. The information is presented in the form of a general advisory committee and local occupational cooperating committees. Emphasis is placed upon the need for an occupational cooperating committee that consists of representatives of school and industry people concerned with a particular industry, business, agriculture, or professional field. The practical instruction is designed to be simple and the operational procedures discussed in case studies provide ample material for the instructor to use in his or her committee and using advisory committees.

The author has had extensive manu- facturing experience. He has served as a consultant to the U.S. Office of Educa- tion and the U.S. Department of Agriculture on industrial education. At present, he is the Special Assistant to the Director of the United States Employment Service.
News of NVATA

WILLIAM G. SMITH
President, NVATA

As a result of a resolution passed at our last convention, the Executive Board has organized a committee to study and make recommendations concerning professional leadership in agricultural education needed in the U.S. Office of Education. The committee, which met on January 22 and February 12-13, has received excellent cooperation from the National Association of Supervisors of Agricultural Education, the American Association of Teacher Educators in Agriculture, the American Vocational Association, and agricultural organizations including the Grazing, Farm Bureau, and Farmers Union.

A preliminary report of a subcommittee of NVATA's U.S. Office of Education Study Committee is presented below. Members of the subcommittee are James Durkee, NVATA, Chairman; A. H. Krebs, AATEA; T. L. Fauskene, NASAF; L. T. Buchert and Alton Ice, AVA, consultants; James Wall, NVATA, Coordinator; and William G. Smith, NVATA, executive officer. Comments and reactions pertaining to the report should be returned to Dr. Wall for consideration by the Committee.

The report follows.

REPORT OF THE COMMITTEE

Agriculture is a vital industry in America. For all citizens of the United States agriculture is basic to our welfare, our economy, and our national defense. Quality education in agriculture is essential for farmers and ranchers if the nation is to remain competitive and maintain production standards that will assure food, fiber, and clothing for the entire nation. The youth planning to enter the agricultural industry, as well as those men and women currently employed in the agricultural industry, need the services of vocational education in agriculture if they are to keep abreast of the rapid changes in the industry brought about by scientific, technological, and automatic advances.

The committee, while facing the direct concerns of vocational agriculture, also gave consideration to the shortage in quality leadership for vocational education services in the U.S. Office of Education. The committee also considered some of the reasons for the lack of support for and interest in vocational education as well as the leadership needed to give direction to national, regional, and state programs of vocational education. The committee recognized the following as key problems in having the leadership that is desired by the profession and needed by the students in programs of vocational education.

- Lack of administrative leadership in agricultural education.
- Understaffing of both numbers and grade-level positions for the administration of programs.
- An increase in approximately $90 million in 1962 to an authorized appropriation of a possible $600 million for 1970; $279 million should be budgeted for 1970.
- Increased budgeting for the service, leadership, and coordination activities that are essential to programs of vocational education.

The fragmentation of vocational education among Federal agencies and in cooperation with other programs and more than fifteen different agencies is involved in vocational education.

- The lack of clear-cut aims and programs among the various divisions and bureaus responsible for vocational education within the U.S. Office of Education and the lack of coordination and representation in regional offices.

The continuous reorganization within the Office of Education directed by individuals not acquainted with responsibilities and services needed in vocational education.

- The lack of vocational education personnel prepared to act when direction is given by the NVATA Executive Committee.

The failure to provide full funding for various other programs or personnel is given in the Vocational Education Act as well as funds for the staffing and operation of the Office of Education.

Recommendations

- The committee recommends the following staffing for agricultural education in the Office of Education. The staffing plan would provide the minimum leadership and service personnel to staff and support vocational education in agriculture at the national and regional levels.

- Heading the national program would be a Chief or Director of Agricultural Education and specialists.

- One assistant would devote full time to youth organizations and the National Executive Secretary of FFA.

- There would be personnel with education in each of the areas of agricultural education on the regional staffs.

- There would be one specialist in agricultural education in North Carolina and five or more in the regions. These individuals would be responsible to the Chief of Agricultural Education.

- Adequate funds must be available for secretarial assistance, travel, and operation of the staff.

H. M. Hamlin, a national and international authority on agricultural education, died suddenly on December 14, 1968 at his home in Raleigh, North Carolina. Dr. Hamlin was born in Brooklyn, South Dakota. His boyhood years were spent in Minnetonka. He attended Carlton College in 1912-1913 and received the B.S. degree in 1916 and the M.S. degree in 1922 from the University of Minnesota. He earned his Ph.D. from the University of Chicago in 1931.

Dr. Hamlin was a high school teacher of agriculture in Minnesota. He began his career as a teacher educator at agricultural education at Iowa State University in 1920. From 1938 to 1961 he served as Chairman of the Agricultural Education Division, College of Education, University of Illinois. During 1961-62 he served as Chairman of the Division of Vocational and Technical Education at the University of Illinois. Since retiring from the University of Illinois in September 1962, Dr. Hamlin and his wife lived in Raleigh, North Carolina where he was professor and consultant at the North Carolina State University. He was a member of the NC State University faculty for over 40 years. He is survived by his wife Louise, 2155 Ridge Road, Raleigh, North Carolina; a sister and two daughters.

Professor J. K. Coggan, retired from North Carolina State University, died unexpectedly at his home in Cary, North Carolina, on February 21, 1969. He had been in teacher education for many years and had previously served as a supervisor in North Carolina. He also served as secretary and as president of the Southern Regional Conference in Agricultural Education.

J. K. Coggan, known as an outstanding teacher, became a recognized specialist in photography. His photographs probably have been used more widely in books and magazines than any other person in agricultural education. "Portrait by J. K. Coggan" became a familiar credit line. He started the "Stories in Pictures" section of The Agricultural Education Magazine and was Picture Editor for many years.

J. K. Coggan was also a specialist in agricultural mechanics, particularly in facilities and equipment and their proper use. He was much concerned with shop safety and became an expert in color conditioning and lighting for safer work in shops. His influence upon high quality work in a shop became one of his trademarks.

J. K. Coggan is survived by his wife and a daughter.

H. M. Hamlin
1894-1958

J. K. Coggan
1901-1969
Stories in Pictures

Robert W. Walker
University of Illinois

Troy Freesberg (center), a leader in agricultural education at the University of Wyoming, and Jim Durkin (left), Teacher of Vocational Agriculture, accept a tractor engine for the Department of Vocational Education and University High School, University of Wyoming, from Leo Cavalli, Ford Motor Tractor Division. (University of Wyoming photo - Powell)

Tom Johnson (center), Central Region National FFA Vice President, and Dan Lehman (right), President of the Illinois Association FFA, talk with Lloyd Ewell, Farm Director for WCIA-TV, Champaign, Illinois, about vocational agriculture and the FFA. (Photo by Ronald Scherer, University of Illinois)