DOCUMENT RESUME

ED 022 915 VT 006 240

INNOVATIVE PROGRAMS IN AGRICULTURAL EDUCATION.

American Vocational Association, Washington, D.C.
Pub Date 67
Note-28p.
EDRS Price MF-$0.25 HC-$1.20
Descriptors-*AGRICULTURAL EDUCATION, *DEVELOPMENTAL PROGRAMS, *EDUCATIONAL INNOVATION, *OFF FARM AGRICULTURAL OCCUPATIONS, PILOT PROJECTS, *PROGRAM DESCRIPTIONS

Developmental programs resulting from the increased emphasis on off-farm agricultural occupations and considered innovative by state wupervisors of agricultural education are described: (1) 17 high school vocational agriculture programs in horticulture, agricultural mechanics, forestry and conservation, agriculture and distribution, cooperative training in agricultural occupations, and area vocational high schools, (2) two horticultural programs for disadvantaged youth in New York and California, (3) seven post-high school and adult programs, and (4) three teacher education programs. The appendix contains individuals who may be contacted for additional information. (DM)

INNOVATIVE PROGRAMS IN AGRICULTURAL EDUCATION

The integrity of vocational education is dependent to a large extent upon the quality of instruction which is provided by teachers who are competent in their discipline. Vocational education programs should be staffed with individuals who have technical and professional competencies in the discipline in which they teach.

Therefore, it is essential that inter-disciplinary program development be characterized by close cooperative efforts of all the vocational services involved in planning, developing and implementing programs. Their maximum use of specialization and cooperation should result in a shared effort to effectively prepare people for the changing world of work.

INNOVATIVE PROGRAMS IN AGRICULTURAL EDUCATION

Published by
The American Vocational Association, Inc.
1025 Fifteenth Street, N.W.
Washington, D.C. 20005
1967

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FOREWORD

Many occupations require knowledge and competence that are unique to a specific occupation, but in addition require knowledge and competence which function in related occupations. In securing the proper training for some occupations, students encounter problems resulting from the lack of available facilities and trained staff to conduct quality programs. In communities where youth are interested in training requiring knowledge and competence in agriculture, one of the following alternatives may exist: (1) the staff and facilities are adequate for a complete program of vocational education; (2) the staff and facilities are adequate for one or more service areas in vocational education, but inadequate for a complete program, and (3) the staff and facilities are inadequate or not available for any service area in vocational education.

School administrators and vocational teachers have been innovative in planning and designing programs to meet the needs of youth, even though available staff and facilities were somewhat less than ideal. In some cases, teachers have been used to provide limited training in areas other than their specialty.

Problems have arisen because some vocational education leaders felt that vocational instruction was being given in specialized areas by unqualified personnel. Measures should be initiated to correct this condition where it exists. Also, steps should be taken to upgrade teacher certification standards, to improve occupational experiences and to provide additional professional and technical training.

The AVA Committee Concerning Cooperative Relationships Between Agricultural Education and Distributive Education recognizes that some schools, because of circumstances, cannot provide adequate programs of vocational education. It supports the practice that where limited offerings of vocational education are modified to provide closely related instruction from one service, the curricular program be planned jointly by the staffs concerned. Further, when a teacher prepared for teaching in one vocational service must necessarily provide instruction in the area of another vocational service in order that the needs of a special group of students be met, the teacher should be qualified in both services or be provided inservice education for at least minimum qualifications in the other field. The committee indicated that the focus of attention for the growth and improvement of vocational education should not be on the individual service, but upon the provision of quality efforts and programs and upon the team efforts of more than one service in overlapping areas.

This publication contains descriptions of programs that are more developmental than demonstrational in nature. The innovators are trying out ideas to see what will work in their situations and what is of value

for future programs. Programs included in this publication may or may not reflect the position of the American Vocational Association in regard to curriculum development in vocational education. From these innovations, it is hoped that quality programs of vocational education in agriculture and improved team efforts will evolve to meet the expanding occupational needs of our youth.

This material was developed by the Publications Committee of the Agricultural Division of the American Vocational Association to highlight a few of the innovative programs in agricultural education. In December 1964, George W. Wiegers, Jr., University of Tennessee, and representative for agriculture on AVA's Publications Committee, appointed a special agricultural division committee to prepare this bulletin.

The committee members appointed were: Robert E. Taylor, The Center for Vocational and Technical Education; Everett C. Lattimer, State Department of Education, Albany, New York; H. M. Hamlin, Research Consultant, Program for Research and Development in Vocational-Technical Education, University of California at Berkeley; C. C. Scarborough, North Carolina State University, Raleigh, North Carolina; Marvin G. Linson, Director of Agricultural Education, Denver, Colorado; and, Robert Howey, Teacher of Vocational Agriculture, Sycamore, Illinois.

The committee met during the AVA Convention in December 1965, and at that time James W. Hensel, Specialist in Agricultural Education, The Center for Vocational and Technical Education, was named as chairman.

The Agricultural Publications Committee wishes to acknowledge the assistance received from state supervisors of agricultural education, teacher educators, vocational agriculture instructors, school administrators and many others who contributed to this publication.

It is hoped that this project will highlight a few of the innovative programs of agricultural education throughout the United States. Readers are encouraged to contact individuals in the states for further information concerning the programs reported here.

November 1967

I

INTRODUCTION

Much is being said about innovations in education and many other areas of our life. Change is the topic of the day. Leaders in agricultural education are giving much attention to innovations in making needed changes. The purpose of this publication is to recognize some of these innovations so that others may consider adaptations for their own situations.

A word of caution may be appropriate. Although innovations are needed, it does not follow that all phases of current programs are obsolete. Much in the current programs should be continued, extended, and strengthened. The Vocational Education Act of 1963 recognizes this in specific language. At the beginning of the Declaration of Purpose, the following wording is used: ". . . to maintain, extend, and improve existing programs. . . ."

Some innovations which are highly satisfactory in one situation may not be appropriate in another. Innovations in multi-teacher departments of vocational agriculture may not be appropriate in one-teacher departments. In some cases, the key to the success of an innovation is a multiple-teacher situation. Variations such as this may be much more important in adapting an innovation than the differences in other areas, such as the types of agriculture prevailing in the two communities.

Many potential innovators would do well to profit from the experiences of those who have proven to be real innovators. The reports of both young and mature innovators, however, must be studied and analyzed critically. Their personal involvement, for example, may color the outcome too favorably; others may view the innovations less favorably. Although a practice apparently has been used with positive results, it should be introduced tentatively into a new situation and all foreseeable safeguards employed. Provision should be made for realistic evaluation before becoming commited to the practice.

New funds for agricultural education have become available and some of these funds, notably those for research, development, and training under the 1963 Vocational Education Act, encourage innovation. If special vocational education funds do not suffice, funds for testing innovations can be had from the Elementary and Secondary School Act, the Higher Education Acts, the Manpower Training and Development Act, and private sources. This availability of funds points up some real challenges to agricultural educators such as a shortage of competent people who might be safely "licensed" to engage in developing innovations, a shortage of worthwhile ideas and the opposition to innovations so often a part of the general population's attitude.

New types of school organization are permitting new programs.

School systems are becoming larger thus making multiple-teacher departments and specialized instructional services feasible. Comprehensive area vocational programs are being established at the high school level, as well as in post high schools, junior, and community colleges, university branches and specialized vocational-technical schools. The several kinds of programs are beginning to provide a continuum of choices for specialized education for agricultural occupations closely related to job opportunities.

The Publications Committee of the Agricultural Division of the American Vocational Association asked each state supervisor of agricultural education and each head teacher trainer to submit a brief outline of programs which they considered innovative in their state. Persons involved with these programs were contacted later for additional information and a panel of agricultural educators selected those programs considered most innovative.

Much of the publication is devoted to types of innovations which are meant to be more than "success stories." Special effort was made to select innovations that were reported as successful and appeared to hold promise for adaptation to other situations.

II HIGH SCHOOL

The major share of agricultural education programs are offered at the high school level and, because of increased emphasis on off-farm agricultural occupations, a large number of innovative programs have developed. In order to present a wide range of innovations, a few programs in Horticulture, Agricultural Mechanics, Forestry and Conservation, Agriculture and Distribution, Cooperative Training in Agricultural Occupations, and Area Vocational High Schools will be described.

Horticulture

Guthrie, Oklahoma

A high school program of study in Horticultural Occupations has been initiated in Guthrie, Oklahoma (6).* The main objective of the program is to obtain permanent placement in horticultural occupations for the high school graduate. The program includes pilot projects in Horticultural Occupations Training at the high school level. Designed primarily for junior and senior year students, the subject matter places emphasis upon basic skills in plant propagation as well as usage and maintenance of plant materials. The curriculum has been organized to provide two hours of instruction each day. Approximately one hour is spent in the classroom and the second hour includes work in the school greenhouse. Working a minimum of 10 hours per week, students share responsibility for work in a commercial horticultural business. Attempts are being made to place students in horticulture-related positions during the summer between the junior and senior years.

Portland (Oregon) School District

A high school program in landscape horticulture was initiated in the Portland School District during the fall of 1966 (20). The program is a cooperative effort between three schools in the Portland School District and a group of nurserymen to train students for the landscape and horticulture industry.

The central instructional facilities consist of a commercial greenhouse of 17,000 square feet, which has been leased by the school, and approximately two and one-half acres of nursery area. The commercial facilities have been remodeled to provide appropriate classroom and other related facilities. At this time, the program has 60 senior students enrolled with three full-time vocational agriculture instructors. The program has a caretaker who supervises the facility during evenings and weekends.

*See corresponding numbers in Appendix for names and addresses of persons to contact for additional information concerning programs described throughout this text.

Students receive three units of credit for the course which is held daily for three hours. Their time is divided between learning scientific background and applying theory in actual work. Also included in the program is cooperative work experience education with nurserymen and others in the landscape-horticulture business in the Portland metropolitan area. It is planned that all students will take part in such work experience education. The instructional program will continue with two instructors at the center during the summer months. Although the program is limited this year to seniors, it is planned next year that juniors will enter the program and receive two full years of instruction. It is felt that through the two-year program most of the students will be prepared for entry-employment into the landscape-horticulture field which includes the nursery business, the florist business, the landscaping business, turf management, and a large number of other related occupations.

Grand Blanc (Michigan) High School

A program which was designed to adapt a segment of vocational agriculture to a suburban school is in its fourth year of operation at the Grand Blanc High School, Grand Blanc, Michigan (10). The main purpose of the program is to familiarize all students with the many aspects of ornamental horticulture.

The vocational agriculture instructor presently teaches the one-year course to juniors and seniors. Students receive semi-skilled training in sod-laying, patio construction, tree planting, general landscaping, arboriculture, and greenhouse management. The students receive practical experience throughout the school year by working up to 28 hours per week in part-time jobs during the afternoons, evenings and weekends. During the summer, the instructor maintains contact with the students while they are on the job.

The facilities of the school include the agriculture room, a small greenhouse, a hotbed-coldframe (180 sq. ft.), a pit house (420 sq. ft.), an ornamental garden of five acres, and the school campus.

Christopher Columbus High School (New York)

Christopher Columbus High School in The Bronx, New York (25), is conducting a municipal cooperative gardening program of Botanical Science for high school students. The objectives of the program are to explore and develop skills, knowledge, and interest in the field of ornamental horticulture.

Under the "cooperative" program, students spend alternate weeks during the school year in full-time training at the Botanical Garden and full-time attendance at the high school. The program is limited to boys in the junior and senior grades who are interested in preparing for employment in various occupations in landscape gardening, grounds maintenance and flower and shrub production. Each year, approximately 25 to 30 new students enroll in the program. The students are divided into two equal groups, alternating in attendance at the school and the Garden.

Training at the Garden is under the direction of the Senior Curator of Education and his associates. The students are supervised closely by regular foremen at the Garden. Each group, while at the Garden, is divided into four teams which are rotated each six months through all four of the departments. The instructional program includes: the main conservatory; the propagating greenhouse range; the flower gardens and arboretum; and, grounds maintenance. The instructional program at the Garden continues during the summer between the junior and senior years. However, there is no program at the high school during the summer months.

Two instructors, one assigned to each group, provide coordination and instructional services in related botanical sciences at the school. The students are paid an acceptable wage for each week they are in training at the Botanical Gardens. Initially, the funds for these wages were donated by public-spirited citizens and now they are provided by the municipal government. The program is in its third year of operation.

Coventry (Rhode Island) High School

A floriculture program was established at the Coventry High School, in Coventry, Rhode Island (2), in 1963. The program is designed to teach senior girls the basic knowledge and skills needed in floriculture and to provide an opportunity to learn floral arrangement techniques, and greenhouse and house plant management. The current class of 18 senior girls is provided classroom and laboratory experiences including greenhouse management. The students are encouraged to develop individual goals and the course of study is revised as experience and needs warrant. The present one-year course of study includes: a study of plant structure; how plants grow; soil types and conditioners; plant identification; landscape design; and, floral arrangement.

Another 15 girls are participating in the program which is in its third year of operation.

Amphitheater High School (Arizona)

Amphitheater High School, Tucson, Arizona (21), is conducting a pilot program to determine procedures, standards, and teaching materials for implementing supervised work experience education programs in Horticultural Occupations in Arizona.

Seniors who are eager to work in the field of Horticulture and who do not expect to go to college are encouraged to enroll in the program at this school. Students enrolled receive one hour per day of classroom-laboratory instruction and work an additional three hours for a local nurseryman or in grounds maintenance.

Due to the seasonableness of the nurseries business, other areas of Horticulture also are being used for work experience education. Each student has a written training plan which has been worked out by the teacher and the cooperating employer. Through this written training program, the teacher, the student, and his parents know the type of

on-the-job training each student is getting at his place of employment. All employers agreed to start the students at an acceptable hourly rate and all raises were to be based on merit. Students actually were placed about the middle of October 1965. The state department is reimbursing the local school district 100 percent for that portion (50 percent) of the teacher's time which he spends on this program.

Agricultural Mechanics

Casa Grande (Arizona) Union High School

Casa Grande Union High School, Casa Grande, Arizona (15), has established a high school program in vocational agriculture which provides supervised work experience education for students interested in Agricultural Machinery occupations.

Seniors who plan to work in the field of Agricultural Machinery, and who do not expect to go to college, are encouraged to enroll in this program. Students receive one hour per day of classroom-shop instruction and work an additional three hours for a local agricultural machinery dealer or similar type of business (repair shop). A written training plan has been worked out by the teacher and the cooperating employer which provides the teacher, the student, and the parents with a basis for understanding the on-the-job training phase of the program. All employers agreed to start the students at an acceptable hourly rate.

Forestry and Conservation

Portage (Wisconsin) High School

A one-year Conservation and Forestry Course has been introduced at Portage High School, Portage, Wisconsin (22). The course is designed for junior and senior students and each class member is required to carry out some applied, supervised practice in Conservation.

The course is taught by the vocational agriculture teacher who has had specialized training in Forestry and Conservation.

The program consists of balanced instruction in the basic phases of Conservation, Forestry, and practical applications of this instruction. The nearby State Game Farm, County Forester, Soil Conservation Service and State Conservation personnel are among the many resources used.

Sentinel High School (Montana)

Sentinel High School, Missoula, Montana (17), is providing a two-year vocational Forestry program to train Forestry Technicians for non-professional occupations in the United States Forest Service and in private forestry, logging and lumbering firms.

High school juniors and seniors take part in this two-year course which was organized cooperatively by the United States Forest Service, Forestry Department, University of Montana, and the local schools.

Agriculture and Distribution

Polk County High School (Tennessee)

Polk County High School at Benton, Tennessee (8), is conducting a pilot program to meet the needs of high school students in the marketing and distribution of produce.

There are approximately 70 students enrolled in Vocational Agriculture, 50 students in Distributive Education and 12 students in Agricultural Mechanics.

Each day, the students are scheduled for three hours in co-op programs in Distributive Education and Vocational Agriculture-related fields. Sixteen students are receiving on-the-job training under the co-op program. Extensive farm mechanics classes plus one class of automotive agriculture-mechanics are also offered to the students.

The teaching schedule is as follows:

Teacher A	*Teacher B*	*Teacher C—Half-time*
D.E. & Vo-Ag	Ag. II	Ag. I
Ag. Mechanics	Ag. III	Ag. I
Ag. Mechanics	Voc. Co-ordinator	Marketing I
Ag. IV		
Marketing II		
2 hr. co-op of Ag. IV & Mkt. II		

George Wythe High School (Virginia)

A course designed to meet the vocational needs of students interested in preparing for career opportunities in agriculturally-related distributive businesses is being conducted at George Wythe High School at Wytheville, Virginia (27). The two-year program is designed for 10th, 11th, and 12th grade students.

The course is being taught by a graduate in agricultural education who has completed additional training in distributive education.

The content of the course is designed to help the student gain the knowledge, skills, and attitudes needed for successful entrance into occupations in agriculturally-related distributive businesses.

Directed work experience education or supervised practice experiences are arranged for each student enrolled in the course. Some consideration is given to scheduling the students so that the last period of the day is a study period. In this way, field trips and other activities can be planned for this period at appropriate times during the year.

Reidland High School (Kentucky)

Reidland High School, Paducah, Kentucky (24), is a demonstration center designed to show the operation of a program in non-farm agricultural occupations as a part of the regular high school program in vocational agriculture. The Department of Vocational Agriculture at

Reidland has completed one year as a demonstration center, conducting a program which trains senior students of vocational agriculture in agricultural occupations.

The program at the center serves a three-fold purpose: (1) prepares boys for effective "job-entry" and advancement in agricultural businesses which sell agricultural supplies and services to farmers and others; (2) helps boys discover an interest in a particular phase of the business or in agriculture and to move on to take specialized or technical training in an area vocational school or community college; and, (3) stimulates other boys to develop a desire to go to college and prepare themselves for professional careers in agriculture. There is a systematic program of instruction, class work followed by supervised practice related to the class instruction, which runs throughout the school year.

The class instruction includes: problem solving, demonstrations, constructing displays, role playing, rehearsing, and utilization of resource people.

Each boy is placed in an agricultural supply business for a minimum of 200 hours of supervised practice experience during the school year.

Tests were given the students before and after they dealt with certain units of instruction. Employers and teachers make evaluations of student performances after 20, 100, and 200 hours of work experience education.

At the present time, there is no distributive education program in the school. Distributive education personnel provided valuable advice and materials in helping to establish the program.

Cooperative Training in Agricultural Occupations

Greenville (Ohio) Senior High School

Greenville Senior High School in Greenville, Ohio (18), is offering non-farm agricultural occupational training to high school seniors. The purpose of this program is to allow the students, through classroom and on-the-job training, to acquire the skills and abilities of off-farm occupations so they will be qualified to enter the occupations upon graduation.

The 17 students receive seven 45 minute periods per week of classroom instruction and are released from school for one-half day for on-the-job instruction at the training centers. Eight of the students are receiving training in food handling and processing, six as farm machinery mechanics, one is in a greenhouse and garden supply center and two receive training in farm supplies and services. The students work from 15 to 25 hours per week and are paid the beginning legal wage and higher in accordance with union and/or minimum wage laws.

The vocational agriculture instructor works full time teaching the agricultural occupations to students and providing supervision while they are on the job. The students tour each others' work centers throughout the year to increase their knowledge in the fields of agricultural occupations.

The classroom instruction involves production agriculture in the

freshman and sophomore years, and during the remaining years the students choose related courses which are taught on a semester basis. The program is in the second year of operation.

Central High School (Oklahoma)

Central High School in Muskogee, Oklahoma (3), is conducting a pilot program in Supervised Occupational Experience and Training in Vocational Agriculture. The program is in its second year of operation. However, the school has conducted a job-related program in connection with vocational agriculture students since 1958. The class work in the pilot program has been designed around the supervised occupational experience of each student.

The class is offered to juniors and seniors who have had one or more years of regular vocational agriculture. The class meets from 7:00 to 8:00 each morning. The students complete their regular classes at the high school and report to training stations in the afternoon. Most of them work four hours on school days and eight hours on Saturdays. Students are paid the beginning legal wage and higher in accordance with union and/or wage laws.

Texas Vocational Agriculture Departments

Nine pilot programs in agricultural cooperative training were operated in 1965-1966 in Texas in vocational agriculture departments of local public schools (16). This program was expanded to 66 in 1966-1967, enrolling approximately 450 students at the high school level. Students are trained by vocational agriculture teachers in cooperation with agricultural businesses, and scheduled for one hour daily in vocational agriculture class at school. This training is closely correlated with a minimum of 525 hours of supervised on-the-job training and work experience education in an approved occupation. Twenty-eight agricultural occupations have prior approval for placement and others may be approved by Texas Education Agency upon application by local schools.

Paola, Kansas

A pilot project at Paola, Kansas (1), is in its second year of operation exploring the team teaching approach to occupational preparation in a rural school. Students are enrolled in the programs of vocational agriculture, vocational homemaking, business, and shop. During the junior year, a course entitled Commonalities in Occupations is taught on a coordinated basis by a team of teachers. The course meets one hour per day and a teaching team including teachers of vocational agriculture, vocational homemaking, business, shop, physical education, and a guidance counselor functions under the leadership of a head vocational teacher. Each teacher makes his contribution to the program in terms of his background and competencies.

During the junior year, the student makes four occupational exploratory observations of 10 days each. This process includes preparing a

personal data sheet, gathering data about the occupation of interest, preparing a letter of application, being interviewed for a job with a cooperating businessman, and making a self evaluation with the aid of one of the teaching members. After each exploratory experience, a choice is made of an occupation for the next experience or after the fourth experience, a choice is made for the senior year program.

In the senior year, the students apply for the job they wish to use for their occupational experience program. Teacher assistance is given where advantageous, but in no case is the student placed. The student works two or three hours per day and more hours on weekends with a 15 hour minimum. Both hours and wages conform with existing labor laws. Boys with farming opportunities at home may work on their home farms, or another farm, during this time. Each senior student is supervised by his employer and one of the team of teachers.

Area Vocational High Schools

Area vocational schools which will permit expanded programs in high school agricultural education are developing in many states. Increased interest in programs for area vocational high schools provides a new dimension for the development of agricultural education.

Malone, New York

An example of programs at the high school level in agricultural education is the one being offered in Malone, New York (26). The primary purpose of the program is to provide a more effective curriculum for training youth for farming and off-farm agricultural occupations. The program brings together teacher and student resources from high schools in northern Franklin County.

Students in grades 8 through 10 receive agricultural instruction in home schools. Students in grades 11 and 12 are transported to a center for agricultural instruction. At the center, courses are offered in farm production and management, agricultural mechanization, agricultural business and conservation. A separate facility which houses a large shop and three classrooms is provided for the instructional program. There is also a 200-acre tract of woodland available for the conservation class. Young farmer programs also are conducted at all four schools. The teaching staff includes four full-time teachers. This project, now in the fourth year of operation, is financed by a combination of local, state, and federal funds.

III

SPECIAL NEEDS

The Vocational Education Act of 1963 placed emphasis on providing educational programs for disadvantaged youth. The limited preparation of disadvantaged youth has made their acceptance into current training programs virtually impossible. As a result, they cannot compete for available jobs which make ever-increasing demands in skill, training, and education. The programs described in this section provide a brief look at what some states are doing in this area.

Service Occupations School (New York)

The Service Occupations School at Syosset, New York (28), is offering occupational training in ornamental horticulture for high school aged boys and girls who are emotionally disturbed, brain-injured or otherwise handicapped. The training allows youth to take their proper place in society.

Pupils attend school on an all-day basis during which time instruction in general and trade-related education is provided in addition to the occupational training. The youths receive training as ground maintenance assistants, garden center employees, landscape assistants, greenhouse personnel, and flower show assistants.

Santa Cruz County Special Training Farm (California)

Santa Cruz County Special Training Farm at Freedom, California (7), offers a program which is designed to provide an on-going supervised training program in commercial horticulture for trainable mentally retarded students between the ages of 16 and 21. This is a country-wide program which is specifically pre-vocational and community oriented. The curriculum is based upon six areas: (1) social behavior, (2) self-care, (3) communications, (4) basic knowledge, (5) practical skills, and (6) body usage. Special emphasis is placed upon self-control, group participation, grooming, food handling, safety, modes of communication, listening, language skills. information, numbers, social studies, farm and shop tools, household tools and appliances, vocational readiness in farming and sheltered workshops, coordination, health habits, and fitness.

Special certified agricultural instructors for the mentally retarded teach the farm courses under the following headings: workshop unit, homemaking unit, ornamental horticulture unit, poultry unit, livestock unit, truck crops and orchard unit.

The farm staff includes three certified teachers, three classified employees, with consulting staff members available in the areas of medicine, psychology, speech and hearing, and education.

Provision will be made with local non-school agencies to continue services for these youngsters after the age of 21 or at a time when they are ready for employment. These non-school services would include job placement, supervision and custodial care.

IV POST HIGH SCHOOL AND ADULT

Post high school programs for young and adult farmers always have been a part of the total program of agricultural education. Recently, under Public Law 88-210, many new advances and new approaches have been used. Post high school programs in agriculture are emerging in many different types of institutions due to differences in philosophy within each state. In some states, the community college has incorporated agriculturally-related subjects, whereas in other states agricultural education can be found in the area school, the junior college or in the vocational-technical institute. Regardless of the post high school system peculiar to each state, a wide variety of agricultural programs are being established across the nation.

Joliet (Illinois) Junior College

A two-year program to prepare students for employment in the field of agricultural supplies and services is being offered at Joliet Junior College in Joliet, Illinois (12). This was the first of its type in the state of Illinois and started in September of 1964. The college offers an agricultural service and supply school for high school graduates and/or students 18 years of age and over.

Students, largely freshmen and sophomores, under the guidance of four agriculture teachers and three teachers of related subjects, are receiving 60 semester hours of classroom work and practical business experience. The work includes communicative skills, business procedures, agricultural science, agricultural business management, agricultural mechanics and experience programs. The supervised work experience program, optional during summer, consists of six semester hours between the first and second year, and 12 semester hours the last semester (February to June). The program is in the third year of operation.

Chicago (Illinois) City College

Chicago City College, Wilson Campus, Chicago, Illinois (9), is conducting a two-year program in Ornamental Horticulture with special emphasis on: landscaping (design and construction); greenhouse commercial crops production; nursery and turf management; and, retail and wholesale selling and distribution of horticultural products.

The program prepares students for managerial and supervisory positions in public and private landscaping concerns, public parks, conservatories, golf courses, cemetery grounds maintenance, greenhouse management, etc.

High school graduates and/or students with satisfactory work experience who are 19 years of age may participate in the program.

Presently, four semester terms of on-campus resident work and two 16-week periods of supervised work experience education are required with a course content of 64 semester hours of horticulture, social science, business, and communication skills included in the program.

Canton (Illinois) Community College

A two-year training program to train youths and adults for the occupation of farm implement mechanics has been instituted at Canton Community College in Canton, Illinois (11). This Farm Implement Mechanics program is primarily for post high school students; however, high school dropouts and adults also are being served. Students are provided with classroom instruction five hours per day, five days per week under the careful guidance of four teachers—two vocational agriculture instructors and two farm implement mechanics. The course content is primarily complete tractor (including diesels) overhaul, and adjustment and maintenance of all types of farm machinery. The students spend 12 weeks the first year and 8 weeks the second year on supervised work experience education.

Norfolk County Agricultural School (Massachusetts)

Norfolk County Agricultural School at Walpole, Massachusetts (19), offers a two-semester program in ornamental horticulture for high school graduates. The primary purpose of the ornamental horticulture program is to prepare students for entry into general greenhouse work, flower design, garden center management, landscape maintenance, and nursery operations.

The tuition is free for residents of Norfolk County. Non-county residents pay the school's $500 tuition rate which may be reimbursable by the town in which the student resides.

The student, with the major advisor, selects a program of study based on his needs. Courses in the two-semester curriculum include: greenhouse management, floral design, turf management, landscape design, entomology, plant pathology, small equipment and tools, small motors and engines, soils, and testing soils. The students are required to participate in a work experience education program in their major area and are visited on a monthly basis by assigned staff members.

Northeastern Junior College (Colorado)

Northeastern Junior College at Sterling, Colorado (23), offers a program in agri-business with majors in industrial farm chemicals technology and animal science technology. The programs provide technical and business training for sales and retail management jobs in the fertilizer, agricultural chemicals, and feed industries.

Students receive alternating periods of classroom and laboratory training and six months of on-the-job occupational experience during a two and one half year period. Up to 40 new students are enrolled each year under the guidance of the agriculture instructor.

The program began in September 1963, and the first class graduated in March 1966. Curriculum development and administration of the program have been conducted in close cooperation with an industry advisory committee. The demand and salaries for student trainees have increased each year. In 1966, students were placed in 11 states at monthly salaries ranging from $300 to $450 for trainees and approximately $500 for graduates.

Department of Public Instruction (North Carolina)

The Department of Public Instruction at Raleigh, North Carolina (13), conducted a pilot project in the spring of 1966 to explore the use of educational television in providing instruction for organized adult farmer classes in North Carolina. A shortage of specialists in certain technical agriculture subject areas has made it imperative that more effective use be made of the specialists who are available to assist teachers with adult farmer classes.

The pilot project for adults consisted of a course of six lessons on pesticides. Each lesson was taped a week in advanced. A copy of the lesson, outline, visual aids, reference materials, and suggestions on what to do, were mailed to each participating teacher a week in advance of the telecast. Organized groups of farmers met in approximately 45 different schools for the course. The lessons were telecast one night per week for one half hour over the Educational Television Network in North Carolina. Following the telecast, a discussion of the lesson was led by the local teacher(s) of agriculture.

Currently, the Agricultural Education Division of the North Carolina State Department of Public Instruction is conducting three television short courses for adults. Approximately 100 schools are participating in a 20-lesson schedule which includes seven telecasts in Landscaping Your Homegrounds, eight te' casts on Fertilizers and Lime, and five telecasts concerning Swine Production.

Two educational television stations and one commercial station are televising the lessons. An expansion is anticipated next year with broadcasts planned for five educational television stations plus one or more commercial stations.

Helena (Montana) Vocational-Technical School

A farm machinery and implement occupations program to train post secondary students to be assemblymen, repairmen, and salesmen has been initiated in the Helena Vocational-Technical School, Helena, Montana (5).

The two-year course, which began in September 1965, was organized in cooperation with the Montana Hardware and Implement Dealers Association. Two instructors conduct first and second year classes five hours a day during the regular school year.

Work experience education in selected dealerships is provided for students during the summer between the first and second year. A certificate is issued upon completion of the two-year course.

V

TEACHER EDUCATION

Teacher training institutions are attempting to determine the pre-service and in-service educational programs necessary to prepare teachers to provide effective instruction and supervision in off-farm agricultural occupations. The programs described in this section provide a small sample of the current activity in teacher education.

Teacher Education for Off-farm Agricultural Occupations

Oklahoma State University

An agricultural occupations institute was offered to vocational agriculture teachers at Oklahoma State University (14) during the 1965-1966 and 1966-1967 school years.

High school teachers from 17 states have attended one of the two six-weeks summer workshops designed to develop in the teachers the ability to coordinate high school student classroom activities with occupational experiences in agricultural businesses.

Participants exchanged ideas and collected information from many different sources. Information from outside readings, field trips to agricultural businesses, seminar reports, and committee assignments have been crystallized in sets of instructional materials developed as workshop reports during each of the two summer sessions. A proposed secondary school curriculum in agricultural occupations emerged in these reports.

The workshop participants were visited and supervised during the school year. Information was collected on the progress of agricultural occupations programs.

Teaching Materials Center

Texas A&M University

A center for the preparation and distribution of curriculum materials has been established at Texas A&M University through contract with Texas Education Agency (16). The contract supports original production of materials for review by teachers and other agricultural education personnel. Additional materials are supplied to schools through the center on a nonprofit basis.

Priority has been given to materials needed in agricultural cooperative training and in pre-employment laboratory training programs. Materials for production agriculture will be produced after more urgent needs have been met. Study guides have been produced in 12 agricultural occupations. Work is in progress on several others.

Vocational agriculture teachers are being utilized heavily in this developmental work. State advisory committees representing the agricultural business are involved in planning course content.

Teacher Internship in Agricultural Education

University of Wisconsin

A teacher internship program has been initiated by the University of Wisconsin (4) to permit men who have a bachelor's degree from an accredited college of agriculture to earn teacher certification and a master's degree in agricultural education. One of the primary purposes of the program has been to qualify vocational agriculture teachers who have a greater depth in one of the technical fields of agriculture.

The internship proposes to present a more balanced and better prepared beginning teacher. Under this emerging pattern, the prospective teacher devotes less of his undergraduate preparation on how to teach and considerably more time to learning the academic subject that he is preparing to teach. His graduate work concentrates on the underlying disciplines of teaching—psychology, sociology, philosophy, history. The internship following this preparation provides the capstone to this professional program.

Students normally can complete the program in two summer sessions and an intervening academic year, one semester of which is spent in internship. Candidates with a bachelor's or master's degree who are seeking only certification via the internship can complete the program in two semesters.

The internship assignment is a one-semester, licensed internship position in a leading Wisconsin school system, in a design involving a master teacher who by his demonstrated competence inducts the prospective teacher into the profession. The intern-in-team concept, therefore, involves planning, teaching, evaluating, observing, conferring—experiences that must be pursued in the preparation of a quality teacher. A salary is paid to the intern during his off-campus semester by the local school system.

Emphasis is given to the individual and his special needs. The major concern of the program is to prepare outstanding young men as teachers of vocational agriculture and to provide an opportunity for them to learn under supervised field conditions.

APPENDIX

Listed below are persons who may be contacted for additional information concerning the programs described in this booklet. Corresponding numbers will be found in the text.

1. Raymond J. Agan, Head Teacher Trainer
   Department of Agricultural Education
   Holton Hall
   Kansas State University
   Manhattan, Kansas 66502
2. John H. Ball
   Vocational Agriculture Instructor
   Coventry High School
   Coventry, Rhode Island 02816
3. Gene Beach
   Vocational Agriculture Instructor
   Central High School
   Muskogee, Oklahoma 74401
4. Walter T. Bjoraker
   Department of Agriculture and Extension Education
   205 Agriculture Hall
   University of Wisconsin
   Madison, Wisconsin 53706
5. Einar Brosten, Instructor
   Farm Machinery Department
   Department of Aeronautics and Related Trades
   Helena Senior High School
   Helena, Montana 59601
6. Donald L. Coffin
   Vocational Agriculture Instructor
   Guthrie High School
   Guthrie, Oklahoma 73044
7. Coordinator
   Santa Cruz County Special Training Farm
   Freedom Union School District
   Freedom, California 95019
8. Roy Crabtree
   Coordinator of Vocational Education
   Polk County High School
   Benton, Tennessee 37307
9. Joseph Dallon, Chairman
   Department of Horticulture
   Chicago City College
   Woodrow Wilson Branch
   7047 Stewart Avenue
   Chicago, Illinois 60621

10. Patrick F. Dougherty
    Vocational Agriculture Instructor
    Grand Blanc High School
    Grand Blanc, Michigan 48439
11. Edwin Fitzgibbon
    Director of Vocational - Technical Education
    Canton Community College
    Canton, Illinois 61520
12. William French, Superintendent
    Joliet Junior College
    201 East Jefferson Street
    Joliet, Illinois 60432
13. V. B. Hairr, State Supervisor
    Department of Public Instruction
    State of North Carolina
    Raleigh, North Carolina 27602
14. William L. Hull
    Project Director, Assistant Professor
    Agricultural Education Department
    Oklahoma State University
    Stillwater, Oklahoma 74074
15. Max Huff
    Vocational Agriculture Instructor
    Casa Grande Union High School
    Casa Grande, Arizona 85222
16. Earl H. Knebel, Head
    Agricultural Education Department
    Texas A&M University
    College of Agriculture
    College Station, Texas 77843
17. William MacDonald
    Forestry Instructor
    Sentinel High School
    Missoula, Montana 59801
18. Lowell McLear
    Agri-Business Coordinator
    Greenville Senior High School
    Greenville, Ohio 45331
19. Thomas J. McGarr, Director
    Norfolk County Agricultural High School
    Walpole, Massachusetts 02081
20. Monty E. Multanen, State Supervisor
    State Department of Education
    Salem, Oregon 97310

21. Phil Neilson
    Vocational Agriculture Instructor
    Amphitheater High School
    Tucson, Arizona 85705
22. Harold Patton
    Vocational Agriculture Instructor
    Portage High School
    Portage, Wisconsin 53901
23. Orville E. Pieper
    Director of Agri-Business
    Northeastern Junior College
    Sterling, Colorado 80751
24. Clayton Riley
    Vocational Agriculture Instructor
    Reidland High School
    Paducah, Kentucky 42003
25. David A. Waldman
    Chairman, Biology Department
    Christopher Columbus High School
    Astor and Colden Avenues
    The Bronx, New York 10469
26. Robert R. Whitman, Administrative Assistant
    Board of Cooperative Educational Services
    Sole Supervisory District
    Franklin County
    Malone, New York 12953
27. Edwin F. Wilson
    Vocational Agriculture Instructor
    George Wythe High School
    Wytheville, Virginia 24382
28. William Woehler
    Horticulture Instructor
    Service Occupations School
    100 Maple Place
    Syosset, New York 11791