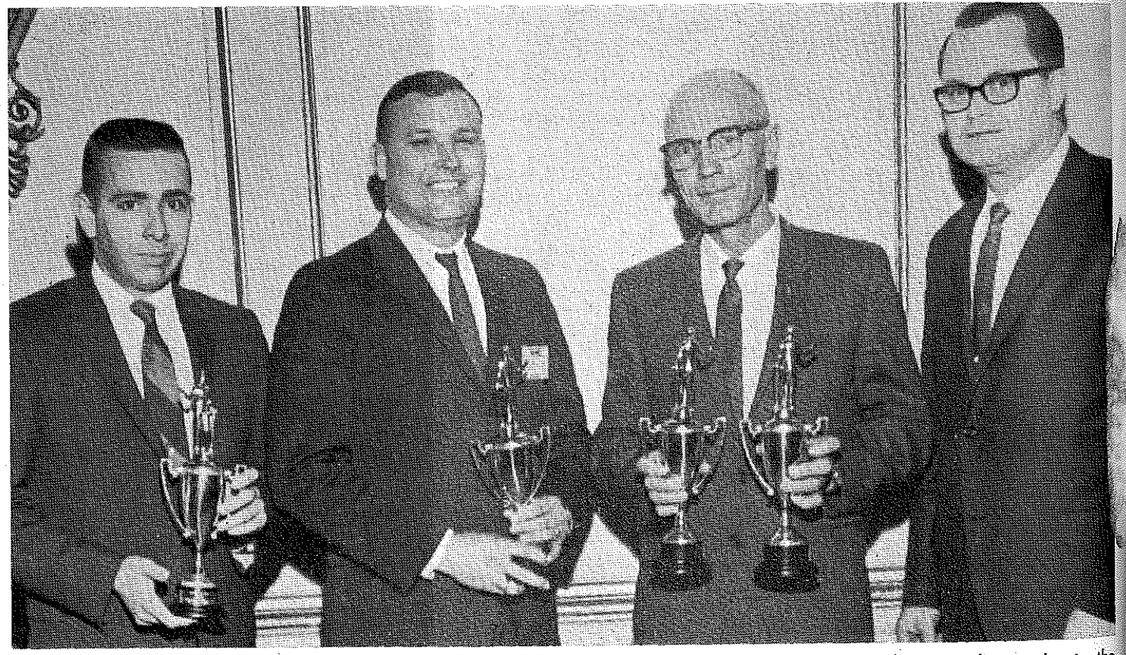
Stories in Pictures

ROBERT W. WALKER
University of Illinois

A part of Minnesota's 21,225 day-old ducklings that were airlifted from the Max McGraw Wildlife Foundation are shown with a Northwest Airlines Stewardess and FFA duck raisers from Long Prairie, Minnesota. (Photo by W. J. Kortesmaki)



Vocational agriculture teachers cited by the Pfizer Agricultural Division during the NVATA Convention in Boston for outstanding service to the FFA are (left to right) Vancil Minnick, Stet, Missouri; Cecil M. Grant, Jr., Section, Alabama; and Dean Pense, accepting awards for Ray W. Knudsen and Holgrim Hollo, Simms, Montana. R. M. Hendrickson (right), Vice President-General Manager of the Pfizer Agricultural Division, made the presentations. (Chas. Pfizer and Company, Inc. photo)

AGRICULTURAL EDUCATION

Agricultural Education

Volume 42 May, 1970 Number 11

Featuring —

GENERAL AND PRACTICAL ARTS EDUCATION IN AGRICULTURE

THE
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EDPRESS

Editorials

From the Editor . . .

Prospects in Perspective


J. Robert Warmbrod

For all intents and purposes, we in agricultural education ignore, if not purposely discourage, the teaching of agriculture as a general or practical arts subject in the public schools. Two notable exceptions are the school gardening program in Cleveland and the Los Angeles program for elementary and junior high school students reported in this issue. Most of us, however, equate public school agricultural education with the term "vocational and technical education." This point of view accentuates the role of agricultural education in occupational preparation and advancement. At the same time it minimizes the general education function which instruction in agriculture can and should serve.

Perhaps our lack of concern for general and practical arts education can be explained, at least in part, when viewed in historical perspective. The Bureau of Education, in a study of agricultural instruction in public high schools in the United States in 1915-16, found that only one-fourth of the schools offered agricultural instruction for vocational purposes. Three-fourths of the schools reported that agriculture was taught primarily for informational and cultural purposes. But the enactment of the Smith-Hughes Act accentuated a continuing swing of the pendulum toward agricultural instruction primarily for vocational purposes, resulting in less and less emphasis on the study of agriculture as a part of general education. This shift in emphasis was applauded by the Federal Board for Vocational Education when in their annual report issued in 1922 they said, "agriculture as an informational subject or as a subject for general cultural purposes only has almost entirely disappeared from the curriculum . . . ."

The perspective is quite clear: special federal and state subsidies for vocational education have been a major factor in changing, and in a sense narrowing, the concept of public school education in agriculture to education principally for occupational proficiency. The narrowing of the

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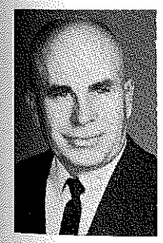
Guest Editorial . . .

General and Practical Arts Education in Agriculture


R. W. Montgomery

All good teachers of vocational agriculture make worthy contributions to the general and practical arts interests of students. Our teaching objectives are based upon two types of concepts: the "whole-child" development of each individual, and subject matter and skills development necessary for vocational success. Electricity learned in the farm shop might be used in a vocation, as a hobby, as a "worthy home member," or as a basis of greater comprehension of the ever-changing world. The nature of the application or the dominant purpose of the learner is the distinguishing characteristic.

Vocational educators, as well as all educators, have been guilty of over-commitment to definitions that were too narrow. This has tended to suppress flexibility, imagination, vision, creativity, relevance, cooperation, and ready-contact with reality. All are key concepts in keeping vocational agriculture adjusted to a dynamic world. To improve this situation is the challenge to vocational education today.

Vocational agriculture cannot afford to insist on a narrow scope of service in the face of trends indicated by these terms currently in use: career development; pre-vocational; basic vocational; programs for people with special needs; using vocational education as a vehicle (motivation, concreteness, relevance); educating the disadvantaged; life sciences; earth sciences; team teaching; vocational maturation; adult basic education; and agricultural education for anyone who wants it.

No one can claim a liberal education who does not have some understanding of the broad field of agriculture. It involves the application of the sciences, economics, mechanical skills, and many other disciplines to at least five hundred occupations and the way of life they imply. The importance of agriculture to any society must be kept fresh in the minds of the people. Those who provide the services of agriculture to the Nation must see to it that

(Continued on next page)

R. W. Montgomery is Professor and Head, Department of Vocational, Technical, and Practical Arts Education, Auburn University, Auburn, Alabama.

From the Editor . . .

purpose of agricultural education to vocational proficiency was accompanied by the perpetuation of agriculture as an appropriate subject for study only in rural schools. So during a period when nonrural groups were increasing rapidly in the population, instruction in agriculture was not available generally to those for whom general and practical arts agricultural education is very appropriate.

So what are the prospects for public school instruction in agriculture for nonvocational, avocational, or general education purposes? An encouraging note is the current trend toward prevocational education which emphasizes occupational orientation and exploration. Since these educational programs are frequently conducted under the aegis of vocational education, ample opportunities exist for agricultural educators to develop innovative instructional programs designed to acquaint many students with agriculture and the occupational opportunities therein.

The potential for general and practical arts education in agriculture will not be realized if instruction is limited to programs and activities construed to be part of vocational education. Much of what most elementary and secondary students learn about agriculture is taught in or as an adjunct to general education subjects. There is little reason to believe that this approach to agricultural instruction for many students will change. Herein lies unlimited opportunities for providing instruction in agriculture for general, nonvocational, and avocational purposes.

Teachers of agriculture, supervisors, and teacher educators have limited experience in providing general and practical arts education or in consulting about or promoting the study of agriculture through general education courses. But agricultural educators hold the key to whether general and practical arts education in agriculture will become a significant part of public school education.

History indicates that leadership for developing this phase of agricultural education will not be forthcoming from federal and state officials whose primary concern is federally-aided vocational and technical education. If general and practical arts education in agriculture is to develop and expand, it appears that teachers of agriculture must promote and develop these programs in cooperation with teachers and administrators in local schools in both rural and urban areas. Teacher educators also have a challenge in redesigning programs to prepare present and prospective teachers for this new role in agricultural education. The development of innovative programs of general and practical arts education in agriculture will be a bold new venture, both in commitment and action, for all of us.—JRW

Guest Editorial . . .

those receiving the benefits understand and support it. This calls for the teaching of agriculture to many who will not earn a living directly from it. However, most people do make use of the arts and sciences taught in agriculture in some meaningful endeavors from part-time vocations to hobbies and in meeting the problems of everyday living.

Vocational agriculture has changed greatly during the past decade. As we enter a new decade it must be even more sensitive to the changing society it is helping to create. To do this, it must have flexibility. Definitions, legal and social structures, and emotional loyalties must not contribute to further cultural lag.

Many educators are advocating some vocational education and work experience for everyone. The nature of agriculture makes it ideal for general and practical arts purposes. As educators, we should be anxious to teach our discipline to anyone who wants it. If we do not, someone else will.

Themes for Future Issues

June	***Evaluation in Agricultural Education***
July	***Agricultural Education in Post-Secondary Schools***
August	***Adult Education in Agriculture***
September	***FFA: Past—Present—Future***
October	***Ideas for Effective Teaching***
November	***Research in Agricultural Education***
December	***Innovations in Agricultural Education***

THE COVER PICTURE

Students studying ornamental horticulture at Sherwood (Maryland) High School are supervised by Marshall Dauberman, teacher of ornamental horticulture, in the development of a landscape plan. Model landscape planning provides experiences one might encounter as a home owner. (Photo by James Pope, Maryland Department of Education)

IN THIS ISSUE

In Los Angeles —

Agricultural Education for Elementary and Junior High School Students

IVAN L. WOLFSON
Los Angeles (California) City Unified School District

Agricultural education has a long and successful history in this megalopolis of over three and one-half million people. Since 1908, programs in agricultural education have been an integral part of the instructional program in the Los Angeles City Unified School District. Besides an extensive elementary program involving 436 elementary schools, agriculture is taught in 47 junior high schools, 33 senior high schools, 28 adult education programs, and three regional occupational centers in the 711 square miles that make up Los Angeles City and its far flung educational domain.

The main emphasis in the early years was in production agriculture. Today with the Los Angeles area having rapidly changed from a scattering of small cities rooted in a rural economy to a great industrial and commercial metropolis, the major emphasis of the agricultural education curriculum is providing vocational and avocational programs primarily in the area of horticulture with some emphasis on other aspects of the agricultural industry.

ELEMENTARY SCHOOLS

The agricultural education program in Los Angeles' elementary schools is concerned with educating boys and girls to live in a world which is both agricultural and industrial. An agricultural science program that has continuity of purposes, principles, and learning experiences is provided beginning in kindergarten and extending through grade six. The elementary agricultural education program emphasizes the resources in man's environment and the ways in which man has cultivated and changed resources to increase their value to him.

Agriculture-Science Centers

The agricultural education program in the elementary schools may be divided into three broad areas: the school program, the Agriculture-Science Centers, and the mobile units. Nine elementary Agriculture-Science Centers are located throughout the school district. These centers are an integral part of the total program and their primary purposes are to help implement the agricultural and conservation-environmental educational programs through these activities.

Ivan L. Wolfson

Ivan L. Wolfson is Specialist in Agricultural Education, Occupational Education Branch, Los Angeles City Unified School District, Los Angeles, California.

—Providing instruction for pupils. Classes visit the center to participate actively in scientific inquiry, observe demonstration lessons, and pursue new agricultural and conservation areas through the use of follow-up activities in the classroom.

—Serving as resource centers. In-service projects and teacher workshops are conducted at the centers. Teachers may observe displays of pupil's work.

—Supplying agricultural materials for investigation. Equipment and supplies are distributed to schools from the Centers on a temporary or permanent loan basis. Many items are expendable and are given outright.

—Serving as a site for meetings to acquaint teachers and the community with the over-all program at the Center.

School personnel are encouraged to visit the center serving their area and to become familiar with its resources, activities, and personnel. One center tabulated over 4,500 elementary teacher visitations during 1969.

Among the materials available for loan are plant science kits, potted plants, incubators, brooders, chickens, rabbits, cavies, and other small animals. Larger animals such as goats, sheep,

(Continued on next page)

Elementary school students study the water holding capacity of soils at one of the Agricultural Science Centers.

Standard facilities for agricultural education in junior high schools include classroom, lath-house, glass-house, and one acre of growing grounds.

and pigs are available for the entire school year and turkeys are available for the Thanksgiving season. Also available are microscopes, microprojectors, rock sets and conservation project kits. Among the consumable materials available are feed and grain displays, seeds and bulbs, plant materials, fertile chicken eggs, soil samples, soil mixtures, and soil experiment kits.

Environmental Study Area

A unique part of most elementary agriculture-science centers is the "Conservation in Miniature" environmental study area. At each center up to 100 school children per day learn about soil and water conservation. Various "working" and "living" exhibits of scientific conservation practices include a miniature farm emphasizing the interrelationship of soil, plant life, and water. Another section stresses fire prevention and the value of chaparral and forests in erosion prevention. A "working" Los Angeles basin flood control schematic model completes the conservation experience for children by realistically demonstrating how 93 per cent of all rain water which falls on the county coastal basin is conserved through the use of spreading grounds.

A conservation investigational classroom is an integral part of the "Conservation in Miniature" field trip experience. This classroom is designed for the purpose of actually involving students in various investigations which relate to their environment. In conjunction with the various kits developed, bulletins of suggested agricultural science experiences have been compiled to help teachers develop and extend pupil's concepts of living things and to assist teachers in using more effectively the materials contained in kits such as that of plant science, using the incubator, conservation, and earth science.

Mobile Units

In addition, four mobile units are used. The Dairy, Conservation, Small Livestock, and Wild Life mobile units each have a specialist and an animal caretaker-truck driver. The units are brought to the elementary schools upon request. These large semi-truck and trailer moble units are made available to the Los Angeles City elementary schools through a grant from the Sears Roebuck Foundation. The requests for these four mobile units are so great that they can usually visit the 436 elementary schools only once during a six-year period.

Girls in a junior high school floristry class construct planters.

JUNIOR HIGH SCHOOLS

Over 21,000 junior and senior high school students take part in the agricultural education program in 80 schools. In the junior high schools, grades seven through nine, four course offerings are provided: exploratory horticulture, horticulture, floriculture, and introductory landscape horticulture.

Courses

Every seventh-grade boy is enrolled in a ten-week exploratory horticulture program which provides experiences, fundamental skills, and knowledge in the production, care, and maintenance of plant materials; insect identification and control; safety in the use of tools and equipment; and laboratory experiences in soils, water, and plant nutrition. Also included is an overview of the board area of the agricultural sciences for career exploration.

Students who develop an interest in horticulture may enroll during grades eight and nine in a two-year elective course in horticulture. The course in horticulture stresses experiences in plant propagation, lath-house and greenhouse practices, introductory landscape, use of plant materials, plant identification, and horticultural applications to home use and beautification.

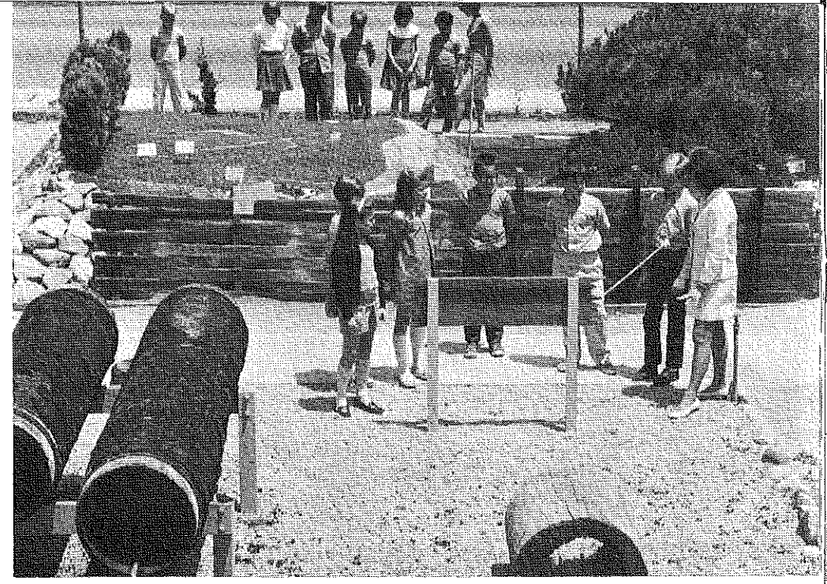
Introductory Landscape Horticulture is a year elective course that provides opportunities for exploration and training in the field of landscape horticulture. It includes development of fundamental skills of plant production, offers instruction in the preparation of landscape plans, and provides opportunities for participation in landscape construction projects.

Girls at the junior high school level are also involved in the program of agricultural education. An elective course in floriculture includes basic information on plant growth and horticultural practices along with experiences in corsage construction, floral arrangements, and use of ornamental plantings in home beautification.

Facilities

Facilities for instruction in agriculture and horticulture have been standardized. Every junior and senior high school built since 1950 includes a classroom with restroom and tool-room facilities, laboratory room, lath-house, glass-house, and outdoor storage facilities. The agricultural unit is an integral part of the total school plant and is situated on a minimum of one acre of growing grounds.

Two horticultural centers have been developed to provide resource personnel, instructional materials, and maintenance services for the 87 junior and



(Right) Elementary school students visit the Environmental Study Area at an Agricultural Science Center. In the foreground, students view a historical water resource exhibit of redwood stave piping and hollow logs used in Los Angeles in the 1800's. In the rear, students study the "Conservation in Miniature," a working and living example of scientific conservation in the Los Angeles area.

senior high school teachers in agricultural education. The facilities of the center, including workroom and power equipment, are available for use by teachers in the construction of teaching aids and the development of audio-visual materials such as charts, collections, displays, and transparencies.

Demonstration plots for turfgrasses and ground covers, plant identification landscaped areas, and plant propagation facilities are located at the center and available for students and teachers to use. Also available from the center are mobile instructional units that bring to the schools specialized instruction and equipment.

The mobile units are transported on vehicles with the driver qualified to demonstrate the use of that specific mobile instructional unit; for example, the turfgrass equipment unit includes aerators, verticut mowers, tillers, sprayers and lawn mowers. An efficient and economic use of equipment and funds results when only two sets of such specialized equipment are needed to be utilized by 80 secondary schools.

HIGH SCHOOLS

The high school programs are more diversified and intensive. Courses are provided for academic, vocational, and general students. For a detailed description of the high school agricultural education program see the article "A Comprehensive Program of Agriculture Education in Los Angeles" in the October 1968 issue of *The Agricultural Education Magazine*. Briefly the courses offered in high school include general and vocational horticulture and agriculture, animal husbandry, floriculture, plant and soil science, laboratory animal technology, horticultural mechanics, and landscape design, layout, and construction.

GENERAL EDUCATION

Agricultural education in the Los Angeles City Schools offers a wide variety of instructional programs in agricultural education. Many students are exposed for the first time to plant growth and other experiences in the plant sciences.

Urban youth need a basic understanding of the importance the agricultural industry plays in the economic and social structure of our nation. Youth in cities need to have opportunities to participate in activities which awaken and develop an understanding of the need for natural beauty in their surroundings. And we in agricultural education have a major responsibility for providing information to a broad segment of students concerning the importance of agriculture in our economy, the dependency of urban areas on the products of the agricultural industry, and the responsibility to provide academic and vocational opportunities in the agricultural sciences.

Designing a Comprehensive Curriculum

T. L. FAULKNER, Supervision
Alabama Department of Education


T. L. Faulkner

What vocational agriculture continues to be, or whether vocational agriculture continues at all, in a school or a state will depend on our willingness to admit the death of the out-of-date curriculum for training to farm only. We know that vocational agriculture graduates will go where the jobs are. We only have to open our eyes to see the parade of young men either dropping out or finishing high school and begging for non-farm jobs in agriculture industry for which most of them have not been adequately prepared.

Are we letting these rural youth down? Can we do better for them? Wherever they may be, the present and future job opportunities in the agribusiness industry must be the basis on which to develop the vocational agriculture curriculum. If we accept the challenge of training for today's total AGRIBUSINESS INDUSTRY, the need and demand for vocational agriculture will explode and expand as never dreamed of before.

OUR OBJECTIVE

The Vocational Education Amendments of 1968 state that vocational education shall be offered to people of all ages in all communities. Vocational agriculture is presently offered in most all rural communities. In fact, it is the only vocational course available to boys in many rural areas. We have shops, laboratories, and other facilities as well as the best qualified teachers in the nation. We cannot serve the needs of the masses if program requirements are so restricted and narrow that only a very limited number of students can enroll in courses pertaining to only one or two specialized areas of the agribusiness industry. Our obligation is to do our best to serve the most. That should be our big objective.

There is only one way to do the best for the most and that is to offer a comprehensive agribusiness industry curriculum to all students, beginning in either the seventh or eighth grade and continuing through the twelfth grade. The need for starting early is to acquaint students with the world of work. The gradual process of guidance, instruction, and practice will be to motivate students to make a sound selection of an occupational objective of his choice. Only after this is done, will students work and study with the needed interest and enthusiasm to succeed.

COMPREHENSIVE CURRICULUM RURAL AGRIBUSINESS INDUSTRY

Following is a brief description of a comprehensive vocational agriculture curriculum that can and will work in a high school with either one or more teachers of agriculture. A tailor-made curriculum to fit the needs and interests of students in any school can be developed by this type of plan. It will prepare students for the total Rural Agribusiness Industry. It is versatile enough to develop students for entry level jobs in sixteen occupational areas. Here is how it can be done.

- **The World of Work (7th or 8th Grade)**

This course is an introduction to occupations in the world of work with some study of life science including the knowledge and skills required of the occupations in the state and the nation. Simple hand tools and elementary basic skills are studied and practiced with wood, leather, plastic, electricity, and other simple arts and crafts. This is an exploratory course of occupational job descriptions including opportunitics and general skill requirements in the total world of work.

- **Vocational Orientation (9th Grade)**

This is a study of occupational subject matter and skill requirements of agricultural science and industry by all students including practice, on a rotating basis, of some shop skills needed in the following occupational areas: agricultural production, agricultural supplies, agricultural mechanics, agricultural products, ornamental horticulture, agricultural resources, forestry, metalworking, woodworking, masonry, building construction, power mechanics and electricity.

- **Basic Agriculture and Industry (10th Grade)**

This is a study of the basic fundamentals and basic shop practices needed in agriculture and industry. Occupational areas are covered as selected by the individual students in the class. Each student selects one of the following occcupations to study throughout the year: agricultural production, agricultural supplies, agricultural machanics, agricultural products, ornamental horticulture, agricultural resources, forestry, metalworking, woodworking, masonry, building construction, power mechanics and electricity.

This course provides gradual in-depth study and will be based on the occupational objectives selected by students. Classroom, group, and individualized instruction is used extensively in this course. Supervised work experience is encouraged.

Students who complete the tenth-grade basic course and desire to continue study in a general occupational trade objective may be directed into an area vocational school or some other vocational service for their eleventh- and twelfth-grade advanced study. Others may continue in Agribusiness Industry courses.

- **Specialized Agribusiness Industry (11th Grade)**

Students in this course are grouped for specific practice and specialized study leading to employment in their chosen occupational field of the Agribusiness Industry. Each student specializes in one of the following areas.

—Agricultural production: general farming, animal science, plant science
—Agricultural supplies
—Agricultural mechanics: general agricultural mechanics; agribusiness metalworking, woodworking, masonry, construction, power mechanics, electricity
—Agricultural products
—Ornamental horticulture
—Agricultural resources
—Forestry
—Other agriculture: pre-professional

Classroom and shop, including group and individualized instruction, will be used with each student following an individual study guide. Cooperative placement and work experience at school and at home are utilized.

- **Advanced Agribusiness Industry (12th Grade)**

This is a continuation of advanced specialized study and shop practice of the eleventh grade Agribusiness Industry course. Time will be devoted to more in-depth study and advanced training in the classroom and in the shop. Each student will continue specialized study in the chosen occupational area and will follow an individual study guide.

Supervised work experience at home, at school, or cooperative on-the-job training is provided for each student. At the completion of this course, students are ready for either job entry or post-high school education. Graduates are issued a certificate indicating their occupational objective and, on the reverse side, a record of supervised work experience. This certificate and record will be useful when applying for a job or when entering post-high school education.

Commissioner of Education Issues Memorandum on FFA

January 29, 1970

Memorandum to Chief State School Officers and Executive Officers of State Boards for Vocational Education

Subject: **Vocational Education Youth Organizations**

On several occasions during the past few months, I have met with business leaders, representatives of educational and professional groups, and staff of the Office of Education concerning various aspects of vocational education, including the position of the Office with respect to youth organizations associated with this area of the curriculum.

It has also been my privilege during these months to meet with many of our Nation's young people, listening to their views on many subjects and learning about their activities and interests. Among the young people with whom I have met are representatives of the Future Farmers of America and of similar youth organizations in vocational education, and I have been much impressed with and inspired by their attitudes and their programs.

As you know, the Office of Education maintains a close relationship with such youth organizations and welcomes their cooperation and support in strengthening our programs of vocational and technical education. We strongly endorse their objectives and seek every effort to involve their thinking in the development of our policies and plans.

Our policy in this regard is as follows:

1. The Office of Education will provide advisory assistance to national youth organizations and to State agencies as part of the official duties of Federal employees designated to serve in this capacity.
2. Federal-State grant funds for vocational education may be used by the States to give leadership and support to youth organizations and activities directly related to established vocational education instructional programs, under provisions of approved State plans for vocational education.
3. The purpose of the Office of Education in encouraging youth organizations, which are related to instructional programs, is to improve the quality and relevance of instruction, develop youth leadership, and provide wholesome experiences for youth not otherwise available within the schools.

It is not the role of the Office to mandate to the States specific programs or organizational structures as means to achieve the goals of vocational education. The responsibility for instructional programs and related activities rests with the States and localities. It is my belief, however, that increased efforts on the part of State Education Agencies to recognize and encourage the growth and development of the FFA and similar youth organizations are highly important and deserve the support of all leaders in American education.

The policies stated in this letter represent the position of the Office and its Bureaus and Divisions concerned with vocational and technical education.

James E. Allen, Jr.
Assistant Secretary for Education and
U. S. Commissioner of Education
Department of Health, Education and Welfare

In Cleveland —

Pioneer Horticulture Program in Elementary Schools

PETER J. WOTOWIEC, Supervision
Cleveland (Ohio) Public Schools

Children in the Cleveland Public Schools have been receiving instruction in horticulture since 1904. The first organized children's gardening program was conducted at the Memorial School Garden, a garden constructed as a memorial to the children and teachers who died in the historic Collinwood School fire. Over the years a program of children's gardening has developed which reaches into the classroom and the child's home as well as to special tracts of land located throughout the city.

A garden exhibit brings out the "artist" in young gardeners.

The program is updated regularly to coincide with changing times. One significant outgrowth of the program was the initiation of vocational horticulture in the high schools in 1962. Over 400 high school students are now enrolled in vocational horticulture programs in Cleveland.

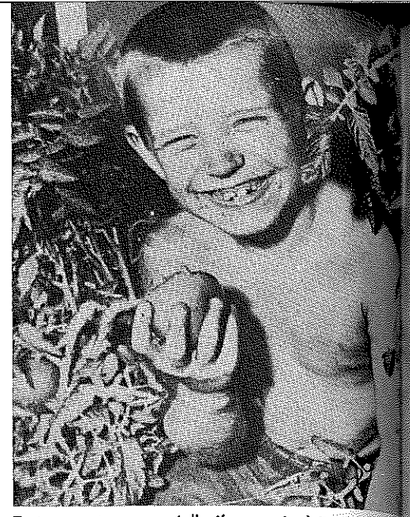
THE NEEDS

As we become more urbanized, one might expect less need for gardening or elementary horticulture in the urban school curriculum. The converse is actually true. As we finally enter the era of environmental awareness, the gardening program actually assumes a much greater importance in the curriculum. Gardening is a very relevant way of teaching youngsters how and where they fit into the environment.

Horticulture in the Cleveland Public Schools has many facets. In addition to the elementary grade programs which are described in this article, there are on the high school level vocational and avocational courses. The Cleveland Technician School, operated by the Cleveland Public Schools, has a post-high two-year horticulture technology program. Adult programs for homeowners and special courses for employees of horticulture businesses are also conducted.

GARDEN SCIENCE

The elementary level gardening program falls into three categories: garden science, home gardens, and tract gardens.

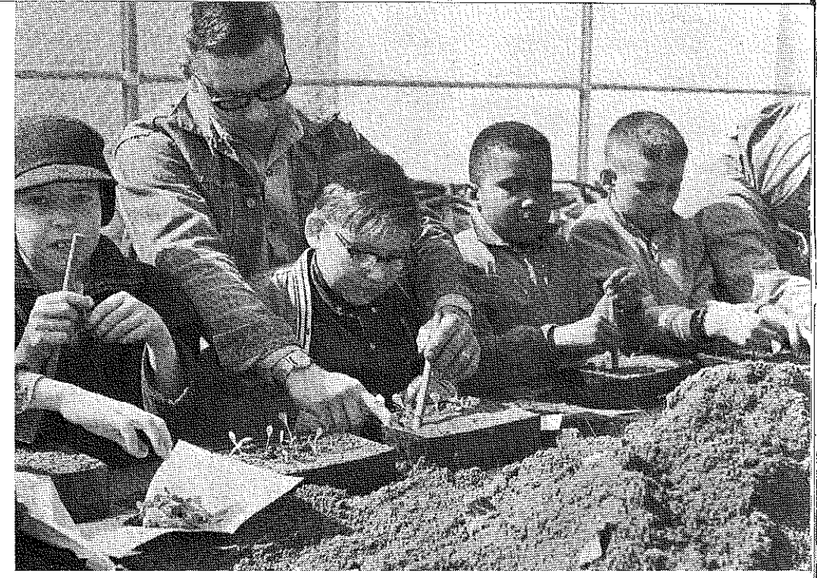


Tastes great — especially if you raised it yourself in your own garden!

Horticulture is actually an applied science. Therefore, a significant part of the program is closely tied in with elementary classroom science. This phase is called garden science. Classroom lessons are developed which include teachers' guides and the necessary supplies for demonstration and student practice.

Garden science lessons for kindergarten through the second grade are basically indoor seed sowing and plant growing. Upper elementary lessons include Rocks and Soils, Potting Dutch Bulbs, Forcing Dutch Bulbs and Lilies for Easter, Constructing and Maintaining a Terrarium, Forcing Paper White Narcissus, Christmas Trees and Greens, and Making Softwood Cuttings. During the spring semester several garden science lessons are directly related to the Home Garden Program. These are How to Enroll for A Home Garden, Planting Cool Season Crops, Planting Warm Season Crops, and Summer Garden Care.

Most elementary teachers have a limited background in plant science. Therefore, the majority of the upper elementary garden science lessons are coordinated with radio broadcasts aired over the Cleveland Public Schools F.M. Radio Station WBOE. Each Green Thumb Club program, as the series is called, is designed for student participation in the classroom during the broadcast. All required supplies are sent to teachers before the broadcast.



(Right) Transplanting seedlings is one of a number of horticulture skills taught through the garden science lessons in the elementary schools in Cleveland.

HOME GARDENS

The home garden phase of the program annually enrolls over 10,000 students in the third through sixth grades on a voluntary basis. These children grow a garden at home. Early in March an enrollment period is held. A promotional program is conducted in each school. Garden enrollment notices, posters of various kinds, and other advertising methods are used. Each student receives a Home Garden Circular which describes the home garden kits which are available. With parental permission, the students select the gardens they wish to grow. A fee is charged which partially offsets the cost of the garden supplies. Each garden kit includes seeds and/or plants, fertilizer, and in some kits, pesticide.

Twice during the summer each student is visited by a garden advisor. Advisors are teachers who are hired on a part-time basis during the summer to visit, assist, and evaluate the gardeners. Effort is made to have teachers visit in their home school district. The value of this home visitation is greater than appears on the surface. It is a means for the teacher to become acquainted with his or her students on a more personal basis. In many instances the garden advisor is the only "school person" the child and parents have had contact with outside the school for other than disciplinary situations. Often the advisor is besieged with gardening questions from parents during the visits.

For many years third graders could enroll for a "mini" home garden at a very small cost. These gardens were not part of the regular home garden program. They were designed to aquaint students with gardening and stimulate interest in future gardening. Third-grade gardeners were not visited during the summer. As the result of curriculum committee work during the summer of 1969, one of the recommendations now being implemented is to include the third grade children in the regular home garden program. That curriculum committee, composed of elementary and junior high teachers, an elementary principal, horticulture teachers, and supervisors recommended that the third-grade students are capable of handling a regular garden and would profit educationally from the experience. Thus, in 1970 a third-grade student who completes a garden project successfully will be awarded a first year certificate. The student is eligible through the twelfth grade for a certificate each year projects are completed.

TRACT GARDENS

Students in the third through twelfth grades who have a strong interest in gardening avocationally or are interested in exploring horticulture as a career can enroll in the tract garden program. Over 33 acres of land broken into one and one-half to eight acre parcels are located adjacent to certain schools throughout the city. Enrollment in the tract garden program is open to any child who resides within walking distance of a tract. For a small fee the youngster "rents" an individual plot of ground and tools, receives the seeds, plants, fertilizer and other necessary items, and participates in a regularly scheduled program of garden education from early spring through fall. The size of the plot varies from approximately 6′ x 10′ for a third-grader to 10′ x 30′ for senior high students. During the spring and fall most tract garden classes are scheduled after school. A few classes meet on Saturdays. During the summer, each child meets twice during the week at a specified time along with 20 to 40 other children of the same age level who are in his "group". All activity is supervised by the tract teacher-in-charge who is assisted by one or more part-time teachers.

AWARDS

Students in the home and tract programs receive a certificate for each year of successful gardening. Special awards are given outstanding students by the Garden Center of Greater Cleveland.

The "all work and no play" philosophy is adhered to in the gardening program. Through the cooperation of the *Cleveland Plain Dealer* each working gardener receives a free ticket to a Cleveland Indians baseball game and a free ticket to the Cuyahoga County Fair.

During the last weekend in August a gala city-wide Garden Fair is held at the Garden Center of Greater Cleveland for all the gardeners. All home and tract gardeners are eligible to submit entries of vegetables, flowers, arrangements, posters and essays. Over 4,500 entries were submitted in the 1969 Garden Fair.

A school gardening program has great values. By working with plants along with other children and dealing with the vicissitudes of nature, it is actually the children themselves who grow in gardens.

What Do the Theorists Say About Occupational Choice?

JAMES P. KEY, Teacher Education
Oklahoma State University

"It may sound good in theory, but it will never work in practice." How many times have you heard this? Sometimes theory is viewed with suspicion by those interested in practical answers to problems. There are times however when those interested in practical answers find that theorists make a real contribution to the search for practical answers.

We in vocational agriculture have been in the business of occupational education for a long time. Have we ever stopped to ask what the theorists say about occupational choice? There are several theories of occupational choice which at first seem quite different; however, I contend that the theories are more similar than at first they might seem.

THEORIES OF OCCUPATIONAL CHOICE

• Trait-Factor Theories

The trait-factor theorists (Parsons, 1909; Kitson, 1915; and Hull, 1928) said that an individual must have a clear understanding of himself, his aptitudes, abilities, interests, ambitions, resources, and limitations. He must have a knowledge of the requirements, conditions for success, and prospects in different occupations. Then he must reason between the relations among these groups of facts and arrive at a choice of a career.

The trait-factor approach views occupational choice as a point-in-time act consisting of the matching of characteristics of the individual with occupational opportunities. The satisfaction of the choice is determined primarily by the correctness of the assessment of the characteristics of the individual and the occupational opportunities.

• Personality Theories

The personality theorists (Roe, 1957; Holland, 1959) indicated that workers select jobs because the jobs satisfy some of their personality needs. According to the personality theorists, these needs are on a scale from the basic needs for survival such as food, water, and safety to needs for self-esteem such as belonging, importance, and independence. Contrasted with the trait-factor theories, this approach renders occupational choice a more unconscious process directed by the personality needs of the individual.

The personality approach shows the needs of the individual, represented by the personality, being satisfied through the need satisfying aspects of occupations. Choice is viewed as the development of a need satisfaction pattern through a series of choices. The individual's perception of his needs and of the need satisfaction ability of occupations determines the adequacy of the choice.

James P. Key

This article is based on Dr. Key's dissertation, "A Theoretical Framework for an Occupational Orientation Program," which was completed at North Carolina State University in 1969. Dr. Key is Assistant Professor of Agricultural Education at Oklahoma State University, Stillwater.

• Developmental Theories

The developmental theorists (Ginzberg, et. al., 1951; Super, 1953) theorized that individuals develop more clearly defined self-concepts as they grow older and compare these self-concepts to their images of the occupational world in trying to make career decisions. The adequacy of the decisions is based on the similarity between the individual's image of himself and his concept of the career he eventually chooses.

The developmental approach primarily sees occupational choice as the process of self-concept development through compromise choices and adjustments. The individual's self-concept and image of occupations are compromised and adjusted through choice. The satisfaction resulting from the choice is largely determined by the accuracy of the individual's self concept and image of occupations.

• Sociological Theories

The sociological theorists (Blau, et. al., 1956; Miller and Form, 1969) took an almost entirely different approach to occupational choice. They stated that circumstances beyond the control of the individual, specifically his social and environmental circumstances, largely determine the career choices of the individual. Therefore, the primary task of the individual in the choice process is developing techniques to cope effectively with his environment. According to these theorists the father's occupation, the father's income and education, financial aid, influential contacts, other historical circumstances, and socio-economic conditions are all forces intertwined which pull with greater intensities upon the individual at different times in his life helping determine occupational choices.

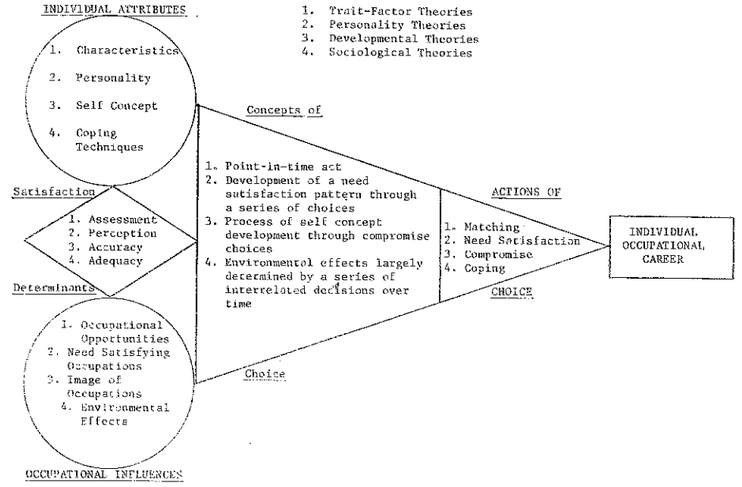
The sociological approach views occupational choice as the process of the individual developing techniques to cope with his environment. The adequacy of the techniques developed by the individual to cope with his environment determines the satisfaction resulting from choice. The sociological concept of choice is a series of interrelated decisions largely determined by environmental effects.

UNIFIED THEORY

In view of the risks of oversimplification and of omitting some of the important points which would be brought out in a broader presentation, let us attempt to view the occupational choice theories as a unified theory. The commonalities of the four theories are presented in the accompanying figure.

This framework attempts to clarify the factors relating to occupational choice and illustrate their dynamic relationships. Each of the theories of occupational choice has elements and approaches in common. Each considers the interaction of attributes of the individual and occupational influences. This interaction is shown to be affected by certain satisfaction determinants and explained by specific concepts of occupational choice.

The framework also shows the dynamic relationships of the different factors. The individual attributes and occupational influences (circles), catalyzed by the satisfaction determinants (diamond), are understood through the concepts of choice (base of the triangle), and joined by the actions of choice (apex of the triangle) to culminant in the individual occupational career.



Commonalities of
Theoretical Approaches to Occupational Choice

WHAT DOES IT MEAN?

What does this say to vocational educators? Does it support our methods of helping students make occupational choices or does it suggest procedures which might be improved? The theorists suggest several directions in which teachers of agriculture and others might move to aid students make realistic occupational choices.

First, we need to consider as many of the attributes of the individual as possible. This may entail greater cooperation with guidance personnel and the use of attitude, personality, and other inventories to better arrive at this information. It might require a closer look at the student's family background and his community to better perceive his environment. It may require a closer relationship between teacher and student for the teacher to better perceive the student's personality and self concept.

Second, is the need for a thorough knowledge of many different occupations and how occupations relate to different individuals. At one time we were well acquainted with the occupations for which we were preparing students since most students were directly concerned with production agriculture. However, since the broadening of vocational agriculture to include agriculturally related occupations such as agribusiness, ornamental horticulture, and others, we now have homework of our own to do to become acquainted with the many jobs and job clusters in these areas. Perhaps closer cooperation with other teachers of vocational education might help us in this area. This gain would be mutual for they could also gain ideas and approaches from our experience in guiding students in making an occupational choice.

As a third emphasis we need to consider the full implications of the occupational choice process brought out by the four theories. Taken in unity they tell us the choice process takes place throughout the individual's lifetime. This suggests that elementary teachers should be concerned with the impressions created about occupations in the student's early years. This also suggests that guidance personnel should be involved with occupational guidance, as well as with educational and personal guidance, from elementary through secondary school. Administrators need to be concerned with providing opportunities for expanded occupational education for all students in the public schools.

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The agricultural educator's role in —

Helping Elementary Pupils Learn About Agriculture

MALCOLM D. SWAN and GEORGE W. DONALDSON
Northern Illinois University
Dekalb, Illinois

"The nation's farms matched its industry with record crop production again this year, the Department of Agriculture reported in a year-end harvest of statistics that looked as lush as a field of Dakota wheat."

Each year the nation's largest weekly news magazines tuck this kind of statement away in an appropriate section, *but nobody whoops with joy.* In almost any other part of the world this would be headline news; readers would dance in the streets!

The blunt truth is that Americans take bountiful harvests for granted and demonstrate unconcern and indifference toward their food supplies. Contrast this affluence with the threat of famine, the short harvests, and the severe food crises perennially threatening families in South America, India, and most other Asian countries.

Lack of Concern

Why this indifference, this lack of concern for the nation's food and fiber? By and large, teachers and the public schools have ignored agriculture. They have failed to orient the growing urban population to the needs, contributions, and limitations of America's agriculture.

This situation will not improve as the percentage of the population living on only one percent of the land increases from the present 75 percent to 90 percent by the year 2,000 and *as fewer and fewer* teachers bring rural backgrounds to the schools. America has a new minority problem. The fact is that most Americans do not understand their land or the people producing their food and fiber. Furthermore, too many people do not care.

The other side of the coin is that agriculture and farm leaders have tended to ignore the nation's schools. Other than a few scattered workshops in conservation and a rare spring visit to a school to stir up enthusiasm for the FFA or 4-H clubs, vocational agriculture teachers, county agents, and farm leaders do little to bring the needs of the farmers and other agriculturalists they serve to the attention of classroom teachers. They provide or offer them little in the way of real help in teaching about farms, farming, and other aspects of agriculture.

Young teachers, in particular, tell us that they know nothing about agriculture. They inform us that it is nearly impossible to find a farm to use for a field trip or for instructional purposes. When we suggest that they contact vocational agriculture teachers and county agents in their communities, they usually seem surprised that such persons even exist or that they could help. It is about time that agricultural educators did something about this!

Sheer Delight! A long remembered experience in a farmer's chickenhouse.

Agriculture in the Curriculum

Agriculture should occupy an important place in the curriculum of our schools. Children should be provided experiences that enable them to develop some real understanding and appreciation of agriculture and farm people. We feel that farmers and agricultural educators should play a major role in this endeavor. They should encourage teachers and other school personnel to include aspects of farming and agriculture in the school program by letting them know of its importance and by providing resources and materials. For example, how many children's books deal realistically with farming?

In addition, farmers can offer their services to schools and encourage teachers to bring their pupils to farms for real experiences. Professional educators in agriculture can offer their services as resource persons for teachers and be a liason between teachers and farmers willing to be hosts for farm field trips. Agricultural educators should often expect to participate actively in these excursions when teachers planning such a trip lack a rural background.

A trip to the farm has become one of the most popular and valuable experiences for our students in the teacher education program at Northern Illinois University's Lorado Taft Field Campus at Oregon, Illinois. University elementary education majors often use such a trip to gain understanding about farms and farming and to learn ways that such resources can be utilized in school programs. Elementary school children participating in this program find the trip to the farm an extremely valuable and interesting experience. The reasons should be evident.

Real Experiences

Although a little time is spent on agriculture in elementary school social studies, few children, even in rural communities, actually see the soil being tilled, a crop harvested, or a cow milked. Even fewer students have pushed a laying hen aside to find a warm egg. Many misconceptions exist about farms, plants, animals, and other aspects of life that are corrected by this trip in which a willing farmer answers pupils' questions. Lets face facts—even many of the boys and girls living in rural America all their lives have never seen or done many of the things that highlight many first-grade farm field trips.

Although children study about wheat in Kansas and Montana and sing about "amber waves of grain" their only real contact may be as remote as a whitened, irradiated loaf of bread. Let's enable these readers and singers to walk through a field of ripening grain, watch a combine in operation, and trickle seeds through their fingers. Their school studies then will take on real meaning.

Taking children to farms to measure and compute answers to down-to-earth problems has two benefits: some understanding and appreciations of farming are gained, and direct applications for concepts presented in textbooks are provided. Calculating the volume of a cylinder makes more sense after seeing a silo being filled. Relationships between areas and perimeters become more clear when an alfalfa field is used for on-the-spot applications.

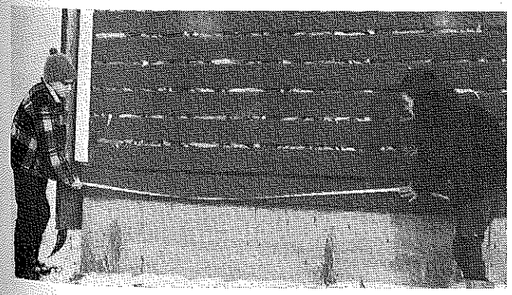
Much of the basic subject matter of man's relationship with the soil can best be illustrated where the two are intimately involved—where man tills the soil and guarantees his survival by disturbing this resource. Through experiences on farms children may see that conflicts exist between our present requirements and the need to pass on resources to future generations. Conservation problems, with all their gray shades exist on farms, and farms are the best places to teach them.

During a farm field trip, elementary school students learn how a milking machine works.

Changing Attitudes

The recent decades have been the first in mankind's history in which an entire nation was more concerned with "too much food" than with "too little food." Agriculture still is being called a major economic problem and oversupply a national menace. Rank and file Americans do not see farming as one of their most successful industries which it assuredly is, and oddly they do not consider the unique abundance provided by farms to be a blessing. Providing children and their teachers with farm experiences as a part of their education is one thing that can help to change this attitude.

In the future, as today, adult Americans will contact and affect agriculture primarily as consumers, voters, and taxpayers. Their experiences with agriculture and farms while in school will linger throughout adulthood and contribute substantially toward feelings of warmth and goodwill for the nation's farm people. Helping all students to have the right experiences is a major responsibility of agricultural educators.



How many bushels does this corn crib hold? An example of the application of concepts studied in the classroom.

Malcolm D. Swan

G. W. Donaldson

Malcolm D. Swan and George W. Donaldson are Associate Professor and Professor, respectively, in the Department of Outdoor Teacher Education, Northern Illinois University, Dekalb, Illinois. Dr. Swan is a former teacher of vocational agriculture in Montana. Dr. Donaldson, a native of Georgia, directed the Outdoor Laboratory of the Tyler, Texas, public schools from 1949 to 1964.

Agricultural Education Must Change with the Times

DONALD J. WATSON
Teacher of Agriculture
North Syracuse, New York

This is my thirty-second year of teaching agriculture. I came to the North Syracuse Central Schools in 1941 and have taught in the system continuously since that time. In 1941 we were a small school with all grades from one to twelve. Now we have a high school with 3,600 students enrolled in two buildings.

As you can see, farms were used for houses, schools, and highways. As Syracuse is the hub city of New York State, this necessitated a change in our agricultural education program. A dual-purpose program including vocational agriculture and agribusiness related courses was developed. Courses in conservation, horticulture, and farm welding were added also to the regular production and management courses.

Instruction and experience in greenhouse, landscape, and lawn maintenance are provided in agricultural education at North Syracuse Central High School.

Graduates

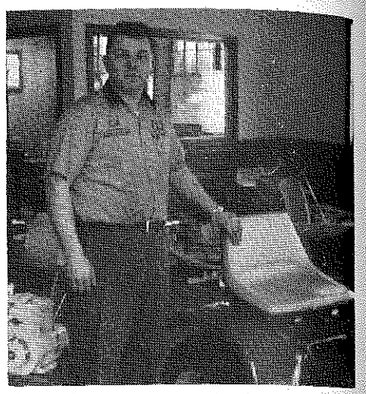
Many good farmers have become established in nearby areas where land values are not so expensive. Other graduates, both boys and girls, have been placed in agribusiness fields like veterinarian, farm machinery, horticulture, managers of agricultural cooperatives, operators of fertilizer plants, artificial inseminators, lawn and garden stores, golf course turf management, nursery management, landscape consultants, tree farming, surveyors, wood pulp processing, supermarket vegetable departments, horseshoeing, truck repairs, and conservation workers.

Many boys go into military service; but when they are discharged, they enroll in agricultural and technical schools for advanced education. Their careers have been influenced by high school courses in agriculture; therefore, when the opportunity is available, they choose agribusiness as the field in which they desire to be established.

The Program

The agricultural education program involves cooperation with the guidance departments. Through guidance personnel in the middle schools we contact prospective ninth-grade students by the use of slides and lectures about the activities of the agricultural education program. Our ninth-grade orientation course acquaints students with the occupational fields of the agribusiness complex.

During the junior and senior years, emphasis is on higher education and establishment in agricultural occupations. Many means are used to acquaint students with agribusiness. Some examples are:



This student gains occupational experience in a lawn and garden store.

—Field trips to agribusiness firms
—Speakers from agribusiness firms
—Cooperation with Industrial Co-op program of the school
—Trips to the Agricultural and Technical Schools; visits by representatives of the schools to inform students of requirements, positions, salaries, and other related information
—Use of bulletin boards made from materials from guidance offices, state colleges, and agribusiness companies
—Use of the advisory board which includes members from agribusiness firms
—Invite agribusiness people to our annual FFA banquet
—State fair exhibits for agricultural mechanics which include many building projects; entries in the Lincoln Welding Contest
—An annual tour of related occupations with the Syracuse Kiwanis Club
—Continuing education for adults in farm and home shop, dairy, and horticulture
—Speaking at service clubs, scout groups, and garden clubs

Change

A teacher who changes his curriculum must project his needs ahead, attend agribusiness meetings, and attend conventions like state agriculture meetings, workshops, NVATA and AVA. He must constantly be looking and willing to try out new ideas. Also, he must take advantage of courses offered by colleges and industry.

A Course on Suburban Living

General Education Through Instruction in Agriculture

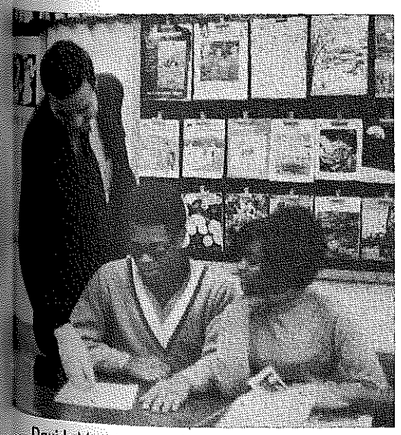
ROBERT D. COTTINGHAM, Instructor
Joliet Junior College
Joliet, Illinois

A real goal of education is to get a reaction from students, to spark thinking, or maybe even bring about a change in thinking. The Suburban Living courses at Joliet, Illinois have received a favorable reaction from students. In fact, one student had the gall to come right out and say, "I like it!"

General Education

Suburban Living is an elective junior-senior level course designed to present agricultural information needed by city and urban youth no matter what their intended occupations. The course grew out of a six-weeks unit of instruction on agriculture formerly taught in a general shop course taken by all freshmen. When the six weeks of agriculture were dropped from the general shop course in 1964, there was a void.

At a meeting with administrators and the agricultural advisory council, Max Kuster, Chairman of the Agriculture Department, stated: "I firmly believe, as a part of general education, that everyone should have some instruction in agriculture." The remainder of the meeting included the proposal for a new type of agricultural education — Suburban Living — which was implemented at Joliet Township High School.



David Manning, teacher of the course, provides assistance to two students enrolled in the Suburban Living course.

Kuster used these arguments in pointing out the need for the course. "As you take the freeways, the tollways, or the main highway across this great country of ours, what do you see? It's all agriculture. It is a major crime that children and adults don't know oats from wheat, corn from sorghum, the breds of livestock, or what the common farm machines are or what they are doing. I had a required course in art and music appreciation in college so that I could better understand and enjoy my environment. If everyone in Joliet could have six weeks of agriculture, they would say it was the best six weeks they had ever spent."

Why?

Why is a course like Suburban Living important to high school students? Agriculture is a major section of our economy upon which all are dependent. Agriculture is our basic industry. Many people today are becoming less and less aware of where their food originates.

It has been predicted that by 1975 we will need one-third more farm products than we are now producing. A program of general agriculture is necessary so that students may understand the total environment in which they are living. Even with a reduction in the number of farms, the United States still has more farms than it has other types of business. No other industry is more affected by public policy which all citizens share in making. All are consumers of agricultural products.

Objectives

There are four major objectives of the Suburban Living course.
—To develop an understanding of what takes place in rural areas.
—To make students aware of the origin of food and clothing.
—To develop an understanding of natural resources and their use and conservation.
—To present and promote the use of practical agricultural information.

If the emphasis in education is to meet student's needs, then one Suburban Living student perfectly stated the rationale for the course: "I figured it might help me in later life!"

Students

Forest ranger, teacher, nurse, secretary, college student—where do students go after completing high school? They go to the same places that all Suburban Living students go. In a survey of one class of Suburban Living students, 29 per cent said they would go on to college. Their occupational aspirations included telephone company employees, computer programmers, and one professional football player.

Most Suburban Living students are interested in sports. When asked their

(Continued on page 287)

The author acknowledges the assistance of the following persons in preparing this article: David Manning, teacher of agriculture at Joliet (Illinois) Township High School; Loren Pease for photography, and Max Kuster, Chairman of the Agriculture Department at Joliet Junior College.

In Omaha —

Agricultural Education from Kindergarten to Senior High School

JAMES T. HORNER
University of Nebraska

Recently I received a phone call from an administrative officer in one of Nebraska's metropolitan school districts volunteering that district's schools for pilot-testing instructional materials for elementary and junior high school students pertaining to the exploration of and orientation to the world of work. This administrator saw many agricultural occupations in his district as well as the need for pupils in the schools to acquire knowledge and understanding of agriculture.

A project of the Department of Agricultural Education at Nebraska involves the development of slides, interview tapes, and other materials for 100 occupations in eleven occupational families or clusters. Agriculture is the first occupational family for which materials are being developed.

These instructional materials are designed "to assist individuals in making informed and meaningful occupational choices" and "to familiarize individuals with the board range of occupations for which special skills are required and the requisites for careers." These purposes of vocational instruction are listed in the rules and regulations pertaining to the operation of the Vocational Education Amendments of 1968. This article describes an agricultural education program in the Omaha Public Schools designed to accomplish these purposes.

Farm Becomes a School

The 167-acre Two Rivers School Farm became available when the Federal Government declared it surplus in 1964. Converting the farm into a school was no small task. Much planning was required by administrators, architects, and vocational educators who sought assistance from an advisory council of consultants from industry, the State Department of Education, and teacher educators.

At one of the early sessions the advisory committee wrestled with the questions of philosophy and long range purposes of the school farm. The following statement resulted: "In addition to teaching vocational agriculture and agricultural techniques, the farm can be used for nature study, field trips, science projects, and surveying and topography in advanced mathematics courses. To those enrolled in other programs of the school system, the Two Rivers School Farm will become a valuable source for information. Kindergartners might find the school farm an ideal place to see cattle and sheep as well as other farm animals. Older students can follow nature trails to gain more information of the outdoor habitat."

Objectives

An earlier study of the metropolitan areas of Nebraska revealed that 12 per cent of the employed males in metropolitan areas were working in occupations which require agricultural knowledge and skill. An additional 20 per cent who were not engaged in agricultural occupations expressed the need for agricultural knowledge or skills. With these data and the statement of purposes of the school farm, the following more specific objectives for the agricultural education program evolved.

—To develop an appreciation of the role of agriculture on the part of all students. This would involve units of agricultural information in elementary grades, exploratory and pre-vocational junior high courses for girls and boys, and courses in general agriculture such as economics and livestock and livestock products.

—To prepare persons for production agricultural jobs.

—To prepare persons for off-farm agricultural employment.

—To provide a course in agricultural science professions for seniors.

—To contribute to the solution of agricultural-rural migrant adjustment problems.

—To provide facilities for training and retraining of workers, including adults, in agricultural industries.

Once the purposes of the programs were clearly conceptualized, the committee focused its attention on the scope and resource requirements and availability. It was concluded that eight of the high schools, fifteen junior high schools, and all elementary schools, via circuit teachers and unit coordinators to assist elementary teachers with agricultural units, should be included. No less than ten teachers, including a supervisor, would be required within five years.

James T. Horner

James T. Horner is Professor and Chairman, Department of Agricultural Education, University of Nebraska, Lincoln. Information for this article was provided by Dr. Owen A. Knutzen, Superintendent, Dr. Edwin Parish, Assistant Superintendent, and Mr. James E. Simmons, Instructor and Coordinator of Agricultural Education, Omaha (Nebraska) Public Schools.

Elementary School Program

Prior to 1966, the elementary schools took students to the zoo and a forest reserve to instruct them about nature and animal life then related this to farming. Most teachers found this quite unsatisfactory. After obtaining the farm, elementary principals, supervisors, and teachers were extremely excited over the possibilities of incorporating biological science, nature study, and animal and farm life learning units into the curriculum through the use of the farm.

An Outdoor Education Curriculum Committee was formed to draw up some materials which would assist teachers at various grade levels in making effective use of the Two Rivers School Farm. The committee formulated an exceptionally good guidebook to be used by elementary teachers prior to, during, and after trips to the farm. The guidebook provides instruction for the teachers and materials that they can use in instructing students. Examples of units in the guidebook are "General Concepts About Farms" and "Farm and City Interdependence." It is well illustrated and includes such items as suggested activities, vocabulary, and an extensive bibliography of books for children, films, and teacher resource materials.

At the present time there are approximately 75 educational tours through the farm for elementary classes per school year. Most of the tours are conducted in the spring and fall. The grade level varies from kindergarten to fifth grades. It is planned that every sixth-grade student will visit the farm also. The farm tours are usually scheduled for one-half day in length.

Pre-Vocational Program

Still in the planning stages is a pre-vocational agricultural course offered in the junior high schools. The intent is to offer agriculture to both boys and girls. The course is called pre-vocational because the course offering will include an explanation of what agriculture really is. Planned are many field trips to a multitude of agricultural businesses in the Omaha area. At all times emphasis will be upon the different levels of employment, various skills and technical knowledge needed, and various types of businesses involved in servicing and processing agricultural products as well as the educational requirements needed to obtain employment in these agricultural jobs.

High School Program

Two Rivers School Farm places vocational agriculture in a different perspective. Here group interests are emphasized, as more than one person might be responsible for a particular animal or project. The use of the farm as a classroom is not just another type of facility, nor is it necessarily to teach boys how to become farmers. Today there are a great many agriculturally related jobs that cannot be filled because of the lack of people with proper preparation. Thus, one role of the farm is to teach skills and technology related to production of the farm. These skills include such things as how to work, practical application of learning, and learning by doing. Skills of this type are related to many different areas in agriculture and may lead to agricultural engineering, machinery design, landscaping, horticulture, mechanics, veterinary, wildlife conservation, farm management, and many others. Along with the expanded vocational agriculture program is a broadened FFA organization which allows students to participate further in farm related experiences.

This year for the first time there are vocational agriculture classes involving almost 300 students in four of the Omaha high schools. Each class spends some time each week at the farm applying much of the instruction that begins in the classroom. Classroom facilities are provided on the farm as are wood, metal, and machine shops and laboratories. Some instruction begins on the farm such as machinery maintenance, metals, and soil conservation which are continued in the classrooms in the separate high schools.

The farm is located approximately 20 miles from Omaha, so transportation to and from the farm is a problem. Some schools receive funding through the Title I program to finance transportation. Parents from some schools are asked to transport students.

A Course on Suburban Living

(Continued from page 285)

main interest in enrolling in the Suburban Living course, 23 per cent indicated nature and 60 per cent said agriculture. Twelve per cent of the students took Suburban Living because they thought it would help them later in life. But interestingly, approximately 70 per cent of the students indicated they enrolled in the course for the credit—an average group of students.

Content

Teachers sometimes forget that students learn better when they enjoy a topic. Pollution, one of the topics in the course, is the topic that caught the attention of one student. Other course units include:

—Crops: study of crop production practices, agricultural machinery, and food marketing and processing.

—Conservation: emphasis on wildlife conservation as it relates to environmental pollution, hunting, and animal pollution.

—Livestock: production practices, buildings and equipment, and the processing and marketing of meats including meat cuts and pricing.

—Horses and dogs: the recreational aspects of pets, proper training, breeds, and their special characteristics.

—Landscaping: design and construction including the formulation of a landscape plan.

—Camping and fishing: questions about equipment and procedures in order to make the most of outdoor recreation in two of the most rapidly growing recreational enterprises.

A Suburban Living course offers a school the opportunity to increase the total educational level of its students. A course similar to Suburban Living can enhance the curricular offerings of the school by adding practical instruction which makes other subjects more meaningful.

Catching Up on the Supply of Teachers of Agriculture

RALPH J. WOODIN
The Ohio State University

According to most coaches, "catch up" football is difficult to play — yet this has been the name of the game in preparing teachers of vocational agriculture during the past decade. There has been a teacher shortage each year since 1960. Even though there has been a 50 percent gain in the number of teachers prepared there is still a shortage of teachers.

Studies of supply and demand for teachers of vocational agriculture have been made each year since 1965 as a guide to a national recruitment effort. During this period some trends in demand for teachers and in types of positions have become apparent. A common format has been followed in each study. Data are obtained from state supervisors in each state and teacher educators in 77 colleges and universities preparing teachers of agriculture.

More Teachers Qualified

The largest number of teachers during any of the last ten years was qualified in 1969. During 1969, 77 different teacher education institutions qualified 1,566 teachers. While the largest increase for a single year occurred in 1969, more teachers have been qualified each year than in the previous year for the past five years. This gain of teacher supply can be attributed to a concerted, unified recruitment effort by the profession.

A slow but steady growth in vocational agriculture in the nation has taken place. Table 1 shows a total of 11,157 positions in 1969 including positions in technical institutes, community colleges, and similar institutions.

Apparently about 60 percent of those qualified for teaching vocational agriculture can be expected to enter the profession. In 1969, 57 percent of those qualified entered teaching. Of the 43 percent who did not become teachers of vocational agriculture, 11.4 percent taught other subjects, 9.3 percent entered graduate work, 8.4 percent entered the armed forces, and 3.7 percent entered farming. The remaining 10 percent entered a wide variety of other occupations. The low percentage of persons entering teaching makes the task of recruitment greater and is probably caused by the availability of employment opportunities in a wide variety of agricultural areas.

A high rate of turnover continues to add to the demand for teachers. Last year the percentage of turnover was higher than usual, totaling 11 percent. This high turnover rate is brought about in part by better salaries in competing fields.

Enrollment

A comparison of the number qualified for teaching vocational agriculture with enrollment in colleges of agriculture for the academic years of 1959-60, 1964-65, and 1968-69 shows that steady gains in agricultural college enrollments occurred throughout the period, but in contrast, persons qualified in agricultural education declined until 1965 when there began a steady increase in numbers. The trend toward lower enrollments in agricultural education was apparently stopped in 1965 and has risen each year since.

Shortage of Teachers

In spite of the teacher shortage, very few teachers with temporary or emergency certificates have been employed. Last year only 278 teachers were reported as holding temporary or emergency certificates.

Some indication of the seriousness of the teacher shortage is indicated by the fact that on August 1, 1969, a month after the beginning of the contractual year in most schools, 121 teachers were still needed but not available. Supervisors also reported that 60 departments would not operate in the 1969-70 school year because of the teacher shortage. The persistence of this teacher shortage is shown in Table 1. The seriousness of the teacher shortage reached its peak in 1966-67, and since that time an increasing number of teachers have become available and the number of teachers needed has been somewhat reduced.

Table 1
A Five Year Comparison of Selected Information on Supply and Demand of Teachers of Vocational Agriculture

	Number Positions	Teachers Needed but not Available August 1	Number Qualified for Teaching	Percent Qualified Entering Teaching
1965	10,378	120	1,038	64.6
1966	10,325	162	1,151	61.4
1967	10,221	232	1,233	60.2
1968	10,606	141	1,314	61.6
1969	10,560[a]	121	1,566	56.9

[a]Does not include 597 teachers of vocational-technical agriculture in technical institutes, community colleges, and similar institutions.

Teaching Positions by Regions

The states with the largest number of teachers in 1969 were Texas with 1,159, North Carolina with 600, California with 544, Illinois with 453, Alabama with 390, and Oklahoma with 385. The number of new positions in teaching vocational agriculture was highest in the Central Region with 88 new positions, followed by the Southern Region with 50, the Pacific Region with 28, and the Atlantic Region with 27.

States adding the largest number of new teaching positions in vocational agriculture included Ohio with 55, Texas with 24, Florida with 21, California with 13, Minnesota with 12, and Virginia with 10. The most acute shortages of teachers in 1969 were reported in Virginia, Florida, South Carolina, South Dakota, California and North Carolina. These six states alone were short 60 teachers on August 1, 1969.

Graduates by Regions

There was a close relationship between the regions with the largest number of teaching positions and those producing the largest number of qualified graduates. The Southern Region had 4,989 teaching positions and produced 696 qualified graduates of which 355 (51 percent) were placed in teaching. In contrast the Pacific Region had only 1,365 teaching positions, prepared 191 teachers of which 137 (72 percent) were placed in teaching vocational agriculture. The Central Region was midway between the Southern and Pacific Regions with a 61 percent rate of placement. The Atlantic Region placed 51 percent of the 104 qualified graduates taking positions in teaching vocational agriculture.

States which qualified the largest number of teachers of vocational agriculture in 1969 included Texas, 286; Illinois, 108; Ohio, 71; Oklahoma, 67; Wisconsin, 63; Alabama, 63; California, 52; Kentucky, 51; Mississippi, 49; and Iowa, 44.

Of the 77 institutions preparing teachers of vocational agriculture, the five institutions with the largest number of qualified graduates in Agricultural Education in 1969 were Ohio State University with 71, Oklahoma State University with 67, Illinois State University with 54, Sam Houston College with 52, and Texas A & M University with 48.

Ralph J. Woodin

Ralph J. Woodin, Professor of Agricultural Education at The Ohio State University, is Chairman of the Professional Personnel Recruitment Committee of the Agricultural Education Division, AVA. A copy of the study reported in this article, "Supply and Demand for Teachers of Vocational Agriculture in the United States for the 1968-69 School Year," may be obtained from the author.

Types of Teaching Positions

Some change in the responsibilities of teachers of vocational agriculture showed up in 1969. About two-thirds of the teachers taught both high school and continuing education classes for adults and young farmers. Only 242 teachers were full-time teachers of adult and young farmer classes.

The comprehensive or general high school was the institution in which 96 percent of vocational agriculture departments were located. Only about 4 percent of teachers were in area vocational schools, and less than one-half of one percent were in vocational high schools. About 70 percent of the teachers were in single teacher departments.

In terms of the kind of programs taught, the percentage of teachers offering full-time production agriculture programs decreased from about 60 percent in 1967-68 to 40 percent in 1968-69. At the same time, the number of teachers offering part-time production agriculture with one or more classes in specialized programs such as agricultural supply and agricultural mechanics represented 37 percent of the total. This represents a substantial increase over the previous year.

Looking Ahead

The studies suggest that a short supply of teachers of vocational agriculture will probably be in the picture for the next several years and that a determined recruitment effort on the part of the profession can do much to meet the situation. Teachers of vocational agriculture, assisted and supported by the entire profession, can markedly increase the supply of qualified teachers of vocational agriculture. It has been demonstrated that this shortage can be met without lowering certification standards or turning to any easy solution to the problem of teacher shortage.

In addition to recruitment of promising high school students for teaching, attention should be given to prompt placement of newly qualified teachers immediately upon graduation. In far too many cases students who graduate from college at a time when jobs in teaching are not immediately available readily find jobs in other areas. A more serious effort at placement by teacher educators and supervisors should result in increasing the percentage of those qualified taking jobs in teaching.

An additional effort which could increase the teacher supply significantly would be to increase the holding power of this position. Too many leave teaching after one, two, or three years. Probably the job needs to be made more attractive in terms of salary and job description in order to hold a higher percentage of the most successful teachers of vocational agriculture.

A recent article in the *New York Times* points out that the national teacher shortage is about over. This may be true for most teachers, but it appears that "catch up" will be the name of the game in preparing teachers of vocational agriculture for some time to come. An active and vigorous recruitment effort mounted by all segments of the profession represents the best means of playing the game.

Instruction in Agricultural Mechanics

PETER FOG, Instructor
University of Minnesota Technical Institute
Crookston, Minnesota
and
W. FORREST BEAR, Teacher Education
University of Minnesota

What factors influence the amount of instruction in agricultural mechanics taught in vocational agriculture? This article reports the findings of a study conducted at the University of Minnesota which was designed to investigate the factors that were related to the number of weeks of agricultural mechanics instruction provided during four years in Minnesota high school vocational agriculture programs.

Ten factors were investigated. The five most significant factors are discussed in this article.

Availability of Tools. The following data indicate that as the number of tools in the agricultural mechanics shop increased so did the number of weeks of agricultural mechanics instruction.

Weeks of Instruction	Number of Tools
41	0-17
57	18-36
59	37-54
68	55-72
71	73-90

Utilization of the Shop. Teachers taught agricultural mechanics for more weeks when they had complete use of the agricultural shop facilities. In the 94 vocational agriculture departments where the shop was used only for agricultural mechanics, an average of 66 weeks of instruction was provided. In the 84 vocational agriculture departments where shop facilities were shared with industrial arts, an average of 54 weeks of agricultural mechanics was reported. In the 20 schools where shop facilities were shared with other school departments, an average of 60 weeks of agricultural mechanics instruction was provided. These data support a strong argument for separate facilities for teaching agricultural mechanics.

Floor Space. As the square feet of free floor space in the shop increased, the weeks of agricultural mechanics instruction also increased. Data related to free floor space and weeks of instruction are indicated below.

Weeks of Instruction	Square Feet Free Floor Space
26	200 or less
54	201-1,500
61	1,501-2,000
66	2,001-4,500

Enrollment. The enrollment in vocational agriculture appeared to influence the weeks of instruction in agricultural mechanics. Seventy-five schools with an enrollment of 15-47 students reported 55 weeks of instruction in agricultural mechanics. Eighty-four schools with 50-74 students enrolled reported 60 weeks of instruction, and forty-one schools with enrollments of 75 or more students reported 71 weeks of instruction.

Credits in Agricultural Mechanics. As the number of hours of credit in agricultural mechanics earned by teachers as graduates and undergraduates increased so did the weeks of agricultural mechanics instruction also increase. The increase was not decisive, however. Teachers who earned 1-14 credits taught an average of 58 weeks; teachers with 15-20 credits taught 59 weeks; and those with 21-50 credits taught 62 weeks. No attempt was made to assess the quality of instruction, but it is assumed that as teachers complete more courses in agricultural mechanics their teaching effectiveness will be improved.

Recommendations. The following recommendations are suggested regarding agricultural mechanics instruction in vocational agriculture.

—An adequate number of tools should be provided in each instruction area.

—The agricultural mechanics program should have its own facilities and tools if the vocational agriculture teacher is to develop the most effective instructional program.

—The shop facilities must have adequate free floor space. The minimum free floor space should be from 1,500 to 2,000 square feet in the shop area. The recommendation of 150 square feet of floor space per student in the largest class should be accepted as a minimum only.

—Schools should be large enough to allow a total enrollment in vocational agriculture of 75 or more students.

—Teachers of agricultural mechanics should be encouraged to keep pace with the agricultural mechanics needs of their communities. Encouragement can be provided by requiring more courses in agricultural mechanics in pre-service teacher education programs plus increased emphasis in graduate courses and in-service workshops.

This article is based on Peter Fog's M. A. Thesis, "Agricultural Mechanics Curriculum in Minnesota High Schools," which was completed at the University of Minnesota.

Using FFA Camp Facilities for Outdoor Education

JOHN H. DAVIS, Supervision
Ohio Department of Education

Camp Muskingum in eastern Ohio has been leased from the Muskingum Watershed Conservancy District by the Ohio FFA Association since 1944. The thirteen buildings have been remodeled to make available to FFA members in Ohio a facility for education in leadership, conservation, and recreation that supplements the instructional program of vocational agriculture.

When the facilities are not being used by the FFA Association, they are available to other interested groups. Last year the camp's board of directors offered the facilities and equipment to interested school districts as a site for school camping and outdoor education programs.

Camping Programs

The school camping program in Ohio varies from school to school; however, most programs range from two to five days in length. The program has as its philosophy that all learning does not occur in the classroom, since many schools offer a "true to life" camping experience for sixth-grade pupils.

Prior to arrival at camp teachers prepare pupils for what is forthcoming. As the excitement mounts, buses pull into the outdoor education center to begin a new educational experience for many students. For three days approximately 200 students, counselors, and teachers will learn and share ideas and experiences as they live and study together.

As each pupil finds his or her counselor, things begin to become better organized. Each group passes by the supply room and picks up bedding and dormitory supplies on the way to their dormitories. First efforts at making beds bring comments as sheets wrinkle and pillows refuse to cooperate with pillow cases.

After an orientation period, the dinner siren brings hungry pupils to the dining hall. After a temporary silence for the blessing, pupils begin passing dishes of food and busily filling plates as counselors assist in checking table manners. Dinner ends with everyone singing camp songs. A rest period, followed by an outdoor movie and an inspirational period finds everybody ready for lights-out at 9:30 p.m.

Reveille at 7:00 a.m. and the breakfast call brings sleepy, stumbling boys and girls out of the dormitories to wash up, assemble for the flag raising ceremony, and on to breakfast. Following breakfast and a camp clean-up period, everyone heads for a previously assigned class.

The morning is spent studying such things as aquatic life, weather, birds, and living things. Eyes grow big at the sight of squirming and wiggling things in a drop of water under the microscope, and ears prick up as some unknown bird breaks the stillness of the morning with a cheery song. Creative writing and art, basic geology, math as it relates to the out-of-doors, and ecology studies are also possible courses that can be added to the program.

Lunch, a period of recreation, more classes, a rest period and the wait for dinner are almost too long to be endured by the active campers. After dinner and a rest period everyone is ready for a night hike, an astronomy study, the evening bonfire, and a time of fun.

Breakfast, more classes, recreation, and the regular activities of another day find everyone in a mood to enjoy "Stunt Night" performed by pupils under the direction of counselors. So, two full days of camping came to an end.

Sixth-grade pupils from Tuscarawas County (Ohio) Schools study in an outdoor classroom on camp facilities of the Ohio FFA Association.

After clean-up the following morning and a fire fighting demonstration with Smoky the Bear, the pupils prepare to return home.

Implications for Vocational Agriculture

As our population keeps expanding, we in agriculture education must accept the responsibility to not only prepare men and women for careers related to the management of our natural resources, but give leadership in developing an awareness of the problems at an early age. Pupils at this age are developing their personal habits of citizenship and with this closer brush with nature learn to treat natural resources with the respect they deserve. This involvement will inevitably stimulate more students to pursue a career in resource management.

Camp and outdoor education facilities operated by state FFA associations should be made available to local school districts in an effort to broaden general education in "true to life" outdoor education.

Instruction in Agriculture Through a Consumer Education Course

JOHN HILLISON
Agricultural Occupations Instructor
Mt. Carmel, Illinois

John Hillison

Interesting some high school students in agriculture can be accomplished by a consumer education course. At Mt. Carmel High School we achieve this through a Consumer Living course. The course, suggested by the agriculture department's advisory council in the spring of 1968, was started in the fall of 1968.

The main objective of the course is to prepare high schools for becoming consumers of agricultural products. The semester course is divided into two main parts corresponding to the school's nine-week quarter system. One-half of the semester is spent with instruction on selecting meat and livestock products. The other half is spent on establishing and maintaining lawns and landscaping. The sequence of the instruction depends on the semester. In the fall semester, the course starts with lawns and landscaping and ends with meats; in the spring semester, instruction begins with meats and ends with lawns and landscaping.

Instruction

The units of instruction for the semester course are as follows:

—Establishing lawns: grass seed selection, preparing the seedbed, time of planting, using fertilizers, soil tests

—Maintain lawns: identification of weeds, lawn diseases and lawn insects, use of herbicides, insecticides and pesticides, lawn renovation techniques

—Lawn mower care and safety: lawn mower selection, lawn mower use, care of the small engine and mower, safety precautions for mowing

—Landscaping: tree selection, tree placement, shrub selection, shrub placement, flower selection, flower placement

—Gardening: site selection, seed selection, equipment to use, fertilizer use, pesticide use, time of planting

—Beef meat selection: identification of retail cuts, wholesale cuts, and carcasses, explanation of beef grades and values, explanation of various meat preservation methods

—Pork selection: identification of retail cuts, wholesale cuts, and carcasses, explanation of pork grades and values

—Mutton selection: identification of retail cuts, wholesale cuts, and carcass, explanation of mutton grades and values

Students in the Consumer Living course study the retail cuts of meat at a local grocery store.

References and Activities

The references used in the lawns and landscaping area are from the University of Illinois. The references used in the units on meats include the book, *The Meat We Eat,* and the "Meat Identification Kit" published by Interstate plus various publications from the National Livestock and Meat Board.

A tour to the meat department of a local grocery store supplements the classroom instruction in meats and meat selection. To supplement instruction for establishing and maintaining laws, students grow various grass seeds in a germinator.

There have been 21 students enrolled in each Consumer Living course this year for a total enrollment of 42. The students enrolled in the course include sophomores, juniors, and seniors.

BOOK REVIEWS

GERALD R. FULLER, Special Editor
University of Vermont

ESSENTIAL ASPECTS OF CAREER PLANNING AND DEVELOPMENT by J. C. Atherton and Anthony Mumphrey. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1969, 307 pp. $5.95.

The purpose of this book is to present in a practical and useful way some guidelines on career planning and development. It is written especially for persons preparing for employment and for those who are exploring the world of work.

The first five chapters range from a broad introduction to the "World of Work" to the specifics of "Applying for a Position." The need for the individual to know himself is continually stressed through the chapters "Planning a Career" and "Social and Personal Competencies Needed by Employees." Ways of obtaining job information and how to evaluate it are discussed in the chapter on "Locating Employment Opportunities."

The second section of the book discusses employment and advancement in an occupation. It varies from "Making a Beginning and Advancing in Job Responsibility" to the need for "Continuing Education Programs." The importance of the human relations aspect of an occupation is pointed out in the chapters "Working with Others" and "Employee Relations." Interaction between the individual, other individuals, the occupation, and the community is discussed in chapters on "Increasing Job Competency," "Job Security," and "Professional and Civic Organizations." "Employee Benefits and Privileges" are explained and recommendations are made about "Using Leisure Time Intelligently."

This book should be most valuable as a reference for teaching related to agribusiness subjects and off-farm occupations. It will greatly aid career counseling and provide practical suggestions students can use to obtain jobs. Instructors of pre-vocational courses will find the book most helpful. Teachers, counselors, and administrators should find this book a valuable tool in aiding career planning and development.

James P. Key
Oklahoma State University

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FUNDAMENTALS OF SERVICE—POWER TRAINS. Moline, Illinois: Deere and Company, 1969, 146 pp. $5.00 single copy; $3.75 each for 10 or more; $55.00 for 165 matching 35 mm color slides.

This manual is the fourth in a series. Its main purpose is to help the reader understand and service power trains with speed and skill. Chapter headings are Power Trains—How They Work, Clutches, Mechanical Transmissions, Hydraulic Assist Transmissions, Hydrostatic Drives, Torque Converters, Differentials, Final Drives, Power Take-Offs, and Special Drives. The well-written, easily-understood technical information emphasizes commonly used applications for farm and industrial machines. There are numerous illustrations, many in color, and helpful definitions of terms.

The Service Publications Department at Deere and Company researched the manual. Chapters were assigned to experts in the field. Copy was reviewed by the company's own design engineers and by outside vendors to assure technical accuracy and comprehensive coverage. The material is presented objectively and without a commercial message. The book can be used by experienced mechanics and shop trainees as well as vocational students and interested laymen.

Benton K. Bristol
Illinois State University

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From the Book Review Editor's Desk

OCCUPATIONS FOR YOUTH IN AGRICULTURE (Charts) by Harold M. Byram. Danville, Illinois: The Interstate Printers and Publishers, 1968. $4.00.

This series of four charts and the accompanying teacher's guide should "help youth visualize the vast number and wide variety of opportunities in agriculture that are open to persons having agricultural background and/or training." The charts list 110 occupations in 11 sub-groups.

EDUCATORS GUIDE TO FREE GUIDANCE MATERIALS. Compiled and edited by Mary H. Staterstrom and Joe A. Steph. Randolph, Wisconsin: Educators Progress Service, Inc., 8th Edition, 1969, 236 pp. $7.50.

One copy of this publication should be in every school. "It lists, classifies and provides complete information on titles, sources, availability and contents of 599 films, 73 filmstrips and slides, 28 tapes, scripts and transcriptions and 227 other materials — bulletins, pamphlets, charts, posters, magazines and books — a total of 927 selected free resource items." New items are added each year and items withdrawn from circulation are deleted.

INSECTS AND INSECTICIDES by R. C. Reay. Edinburgh, Scotland: Oliver and Boyd, Ltd., 1969, 152 pp. price 7/6d.

Junior college teachers of advanced agricultural chemicals courses will be likely to find this inexpensive paperback a useful addition to their library. A sound knowledge of both chemistry and biology will help a reader better understand the material presented.

FARM CHEMICALS 1969 HANDBOOK. Willoughby, Ohio: Farm Chemicals, 1969, 472 pp. $16.00.

This publication will be a valuable annual reference for teachers. The publication is described as a "complete reference to fertilizer and pesticide products and the companies supplying them." You can find trade names, common names, toxicity data, descriptions, and definitions of over 3,500 products.

Students Need Help in Choosing Occupations

VANIK S. EADDY, Teacher Education
Auburn University


Vanik S. Eaddy

The socioeconomic status enjoyed by the family is directly related to parental occupational attainment and job prestige. Job status is conditioned by a choice to pursue a realistic occupational objective, and to obtain the educational background or experience for effective performance.

Frequently, these extremely important choices must be made by youth who have neither the vocational maturity nor occupational information needed to plan logically for satisfactory and rewarding careers. Vocational educators are in a unique position to render a valuable contribution to students' vocational development. If such a service is to be rendered, then all available resources must be mobilized to aid student in making career choices.

Research

Research by Super and Overstreet (1960) and Ginzberg (1952) has shown that high school-aged youth are at a stage in the vocational developmental process when reality considerations are weighed against interest values. Close personal contact with youth during the exploratory and establishment stages could provide vocational educators the opportunity to exert an influence on occupational choices, second only to that of parents. If these statements are true, why then have we failed to rise to the challenge?

In a recent study (Eaddy, 1968), it was concluded that high school vocational agricultural students were better prepared to make educational decisions than occupational choices. Educational expectations were undecided by 15 per cent of the students, but occupational expectations were not crystallized by 41 per cent of the students. This latter figure should cause concern among vocational educators in programs which are authorized funding based upon the training of students for their chosen occupational objectives.

The importance of individual counseling with students on their educational and occupational plans should be recognized by all educators. Such conferences provide excellent opportunities to supply occupational information needed by students in vocational choice-making. Evidence indicates that a majority of high school students are never provided the opportunity for a personal conference with guidance counselors or teachers concerning course choices or occupational plans.

A study involving vocational agricultural students revealed that 49 per cent of the students had discussed their course choices with guidance counselors. Course choices were discussed with teachers by 44 per cent of the students. Only 36 per cent of the respondents had discussed occupational plans with guidance counselors, and 35 per cent of the students indicated they had been advised on these matters by teachers (Eaddy, 1968). Similar data were encountered in a study of high school senior boys by Dobbins (1968).

It has been well documented that occupational information is not readily available to the majority of students. Moreover, data reveal a weakness in the ability of high school youth to use occupational information in career choices. Kaufman (1967) says, "Most young people of high school age have very limited occupational knowledge. Such information as they have is more often based on popular myths and sterotypes rather than on actual facts. In the absence of information, occupational decisions are either postponed until after high school or made because of identification with a particular social class. If a decision is made, it is typically changed after the individual leaves school."

Suggestions

Based on research findings, the following suggestions are offered for the improvement of vocational education in the public schools.

- A functional, comprehensive program of general and vocational education should be established in the public school system. Such an organization could be very beneficial in preparing persons of all ages and abilities for job entry and advancement. The strength of this arrangement lies in the team teaching approach. Through utilization of the services of each of the academic and vocational disciplines, the entire educational resources of the school are brought to bear upon the development of students.
- A philosophy of occupational education for all students should be adopted by educators. This preparation should be commensurate with the physical and mental abilities of each student and should extend into post-high school study.
- A study of occupations should be included as a part of the school curriculum. This orientation would make a worthy contribution to student career choices if begun in the elementary grades and continued through placement in a satisfactory occupation.
- Supervised work experience programs should be used whenever feasible to permit practical on-the-job study of occupational duties.
- The school's obligation to the student should include the preparation for additional education or job entry, and it should involve placement whenever desired. It should be the responsibility of the school system to conduct formal follow-up of its graduates as a measure of educational performance.
- The public school system could provide a valuable service through initiation of occupational information programs for parents. Parents are the most influential persons in the career choices of youth.
- Professionally trained vocational guidance personnel need to be provided the schools in sufficient numbers to permit frequent conferences with students concerning career plans.

Summary

High school youth need help in choosing occupations. Moreover, vocational teachers rank next to parents in influencing the career choices of youth. Vocational educators are in a unique position to direct and assist students with career decisions.

Vocational educators could be extremely beneficial in assisting students in career development through the following activities.

—Become familiar with the interests and needs of students.

—Take every opportunity to become professionally and technically prepared to provide occupational counseling to high school students.

—Develop an understanding of opportunities and requirements of the world of work.

—Coordinate vocational counseling activities closely with administrators and guidance personnel in the school system.

—Supply specific occupational information to students which would not otherwise be available through general guidance activities in the school.

—Work closely with students and businessmen to provide practical vocational education and realistic work experiences.

—Hold individual conferences with students concerning occupational plans.

—Conduct placement and follow-up services as needed for effective student career planning and program evaluation.

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Ginzberg, Eli. "Toward A Theory of Occupational Choice," *Occupations*, 30 (1952), 491-494.

Kaufman, J. J., C. J. Schaefer, M. V. Lewis, D. W. Stevens, and E. House. *The Role of the Secondary Schools in the Preparation of Youth for Employment: A Comparative Study of the Vocational, Academic, and General Curricula.* University Park: Institute for Research on Human Resources, Pennsylvania State University, February, 1967.

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News and Views of NVATA

JAMES WALL
Executive Secretary

A recent national survey conducted by NVATA revealed that some members are almost totally unaware of the aims, purposes, and activities of the NVATA. Others do not understand the reasons for professional organizations. Some wrongly believe that the main activity of NVATA should be the development and distribution of teaching aids and materials.

For any organization to be successful its membership must be kept informed. Keeping members informed is the problem. With a membership of over 10,000 and annual dues of only $5.00 it is impossible to contact NVATA members on a regular basis. However, NVATA probably does as good or better job of informing members than do many other professional organizations.

A monthly newsletter, "News and Views of NVATA," is sent to all state association officers. It also goes to all state and national supervisory and teacher education personnel. Each NVATA vice president sends a monthly newsletter to state association officers in his region including all district and area chairman. These newsletters also go to head state supervisors, head teacher educators, farm organization leaders, and others.

A national convention and six regional leadership conferences are held each year to which most associations send delegates. The 1970 convention will be held in New Orleans the first part of December. Regional leadership conferences will be held as follows:

REGION I
May 1-2, Phoenix, Arizona
REGION II
June 25-26, Gunnison, Colorado
REGION III
June 18-19, Ames, Iowa
REGION IV
June 19-20, Osage Beach, Missouri
REGION V
August 7-8, Athens, Georgia
REGION VI
August 10-11, Morgantown, West Virginia

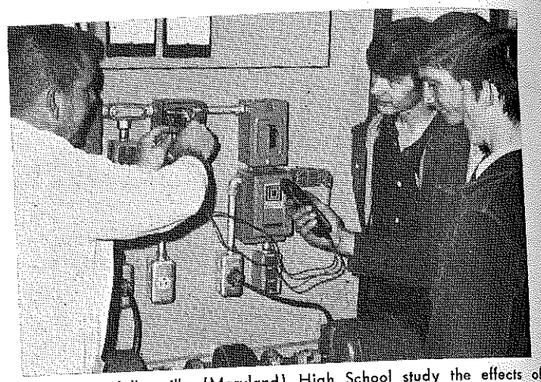
For the most part NVATA must rely upon the state associations to keep members informed. This can be done by including excerpts from "NVATA News and Views" in state association newsletters, by encouraging more members to attend national conventions and regional leadership conferences, and by reporting on and discussing NVATA activities at state and district conferences.

State and national organizations will become stronger with an informed membership. State associations need to do a better job of informing the membership about the aims, goals, and activities of NVATA. NVATA cannot do the job alone.

Stories in Pictures

ROBERT W. WALKER
University of Illinois

Spoon River College students in Farm Machinery Technology reassemble a tractor engine after overhaul under the supervision of Jesse Bradshaw (center), Instructor. (Photo by Donald Whitten, Spoon River College, Canton, Illinois)



Students at Walkersville (Maryland) High School study the effects of hazards such as improper fusing, inadequate wiring, and voltage loss using the electrical demonstration board. (Photo by James Pope, Maryland Department of Education)

Work scholarships for $150.00 are presented Jerry Lane (left center) and Steve Fisk, agriculture students at Eastern Kentucky University. Making the presentations are Brian Bowles(left) and Gary McKillip (right), officers of the Agricultural Club at Eastern Kentucky University. Money for the work scholarships, matched by an equal amount from the Agricultural Club, was contributed by local merchants. (Photo by Glenn Hayes, Eastern Kentucky University)

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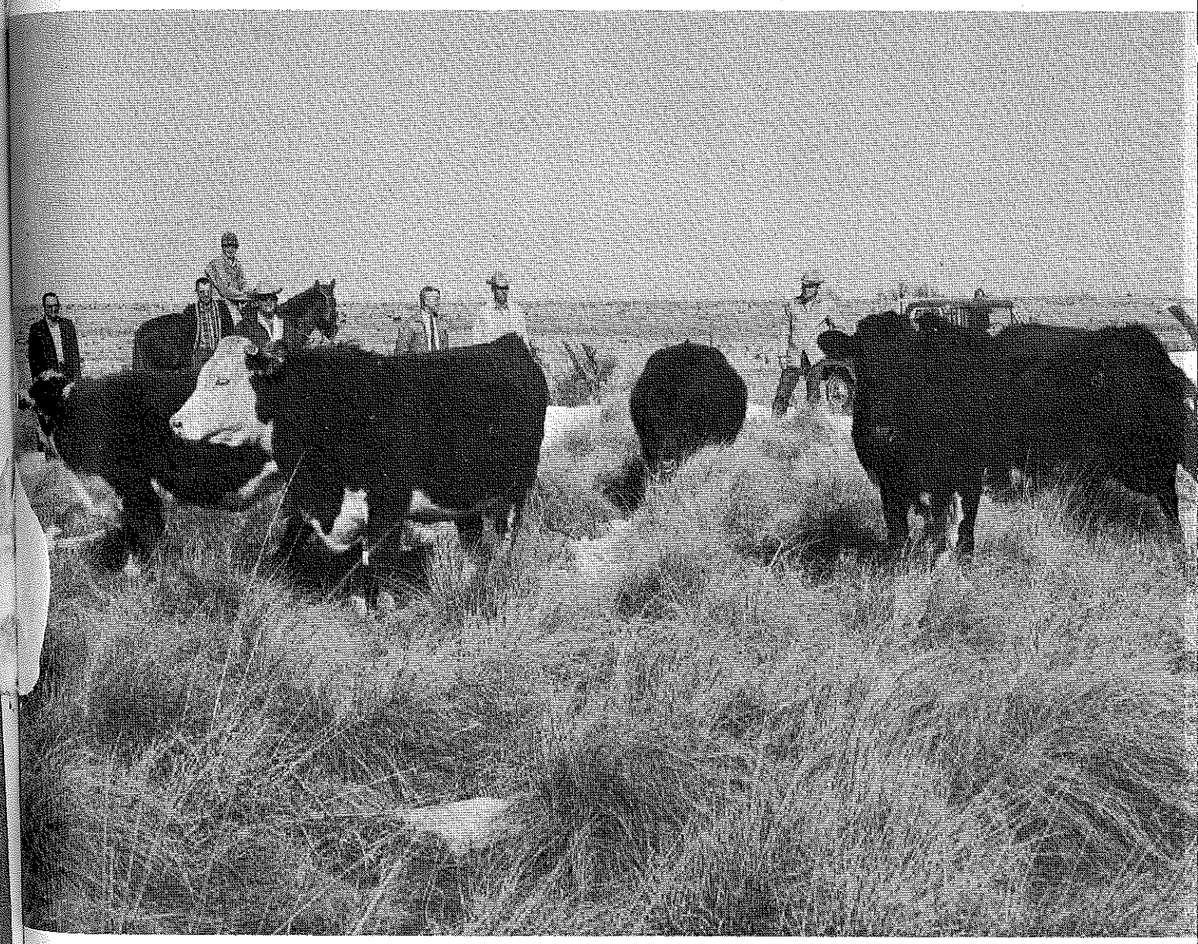

Featuring —

EVALUATION IN AGRICULTURAL