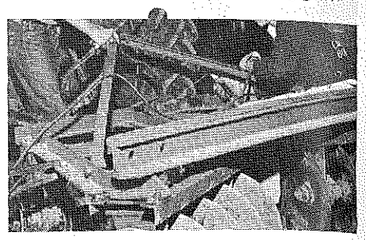
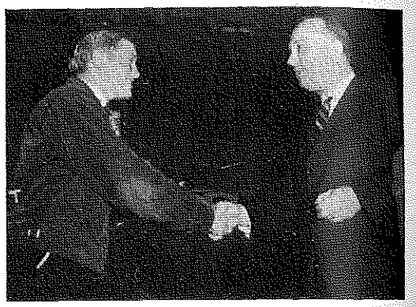
Workshops conducted by the Agricultural Education Division, University of Illinois, prepare agricultural occupations teachers to work with disadvantaged youth. Pictured are (left to right) Vicente Quiton, Jack Shetler, Sam Jones, and Robert Wheeler.

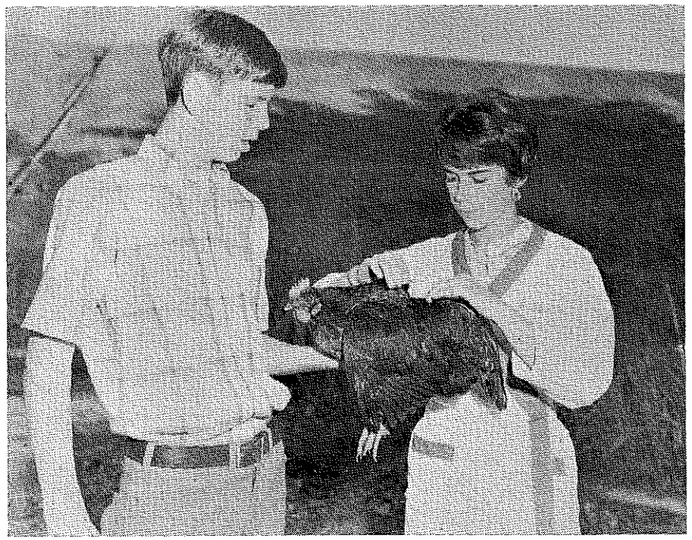


Boys studying vocational agriculture at Cal Farley's Boys Ranch, Texas, do all the maintenance and repair on farm machinery. (Photo by Guy W. Finstad)

# Stories in Pictures



Darrell Cardwell (left), a senior high school student in vocational agriculture from Garnet, Kansas, receives a $500 Harry Darby Scholarship Award for prospective teachers of agriculture from Dr. R. J. Agan, Kansas State University. (Photo by R. J. Agan)



Mrs. Charlotte Glenn, the first woman teacher of agriculture in California, inspects the poultry project of Chris Everett, a vocational agriculture student at Yuba City, California. (Photo by E. M. Juergenson, University of California)

During the 1968 South Dakota Vocational Agriculture Instructors' Conference, Mr. H. E. Urton was honored for his service as State Supervisor of Vocational Agriculture. Mr. Urton retired October 31, 1968. Pictured are (left to right) Lorin Catchpole, President of the Vocational Agriculture Teachers Association, H. W. Gadda, South Dakota State University, H. E. Urton, and W. R. Bryant who was honored for 35 years of service as a vocational agriculture teacher.

AGRICULTURAL EDUCATION

# Agricultural Education

Volume 41 February, 1969 Number 8

*Featuring —*

## AGRICULTURAL EDUCATION IN AREA SCHOOLS

THE
# AGricultural EDucation
MAGAZINE

Vol. 41 February, 1969 No. 8



The professional journal of Agricultural Education. A monthly publication managed by an Editorial Board. Publication office at The Lawhead Press, Inc., 900 East State St., Athens, Ohio 45701.



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Subscription price, $3 per year. Foreign subscriptions $3.25. Student subscriptions in groups one address, $1 for October-May. Single copies .50 cents. In submitting subscripions designate new or renewal and address including zip code. Send all subscriptions to Doyle Beyl, Business Manager, AGRICULTURAL EDUCATION MAGAZINE, Box 5115, Madison, Wisconsin 53705.

Articles and pictures should be sent to the Editor or to the appropriate Special Editor.

Second-class postage paid at Athens, Ohio.

EDPRESS

# Editorials

## *From the Editor . . .*

## Area Schools: Entrenchment of a Track System?

J. Robert Warmbrod

The question of whether area schools should be tried on a national scale as a means of expanding vocational education was answered by the Vocational Education Act of 1963. There is no question about the impact of national legislation and federal funds on the establishment of area vocational schools. The national policy of encouraging area vocational schools is continued with the Vocational Education Amendments of 1968. The decision has been made in several states and in many local school districts that "area vocational education school facilities" is the most appropriate way to maintain, extend, and improve existing programs and to develop new programs of vocational education.

National legislation provides for the establishment of area vocational schools either as separate, specialized high schools or technical institutes used exclusively or principally for vocational education or as departments or divisions for vocational education in comprehensive high schools, junior colleges, community colleges, or universities. Apparently area vocational programs are being established most frequently as separate, specialized schools. The separate vocational school seems to be particularly popular as a means of expanding vocational education for high school students.

The writers for this issue convincingly point out both the advantages of area vocational schools and the need for agricultural education in area schools. Whether programs for occupations involving knowledge and skill in agriculture are or will be included in area schools and the scope and quality of these programs rest primarily with persons in agricultural education—teachers, supervisors, and teacher educators. The area vocational school movement is here; we would be foolhardy to shun it or stay on the fringes of the movement assuming or hoping that agricultural education will be a significant part of area programs.

The establishment or separate area high schools used

*(Continued on next page)*

## *Guest Editorial . . .*

## State and National Planning for Area Schools

Gene M. Love

The importance of the area school movement is emphasized by two observations which I would like to make. First, we are in the early stages of a "vocational education revolution" which will have far-reaching implications in every community in every state. Second, the revolution appears to have initiated a trend in the thinking of persons who plan and administer public schools. The trend has been from what might be called "intellectualism" to something more like "functionalism." These developments have created a favorable environment for change in vocational programs in the public schools. Vocational educators who have helped initiate and who want to continue this revolution and trend in educational thought should be quick to recognize their responsibility for defining their future roles in the area school movement.

The most pressing problem facing the area school movement is the need for state and national planning. We cannot afford to be interested only in the problems of administering and operating area schools without first directing our attention to the problems associated with the establishment of the schools. State leaders need to be more concerned with how many area programs of the same type we will have and can adequately support and in which schools the programs will be located. This presumes that area school attendance areas have been established; if they have not, this should be of major concern to state leaders.

It would appear that the present emphasis on the definition of programs (developing course content and setting schedules, for example) in established schools is, to use a cliche, getting the "cart before the horse."

It is difficult to pinpoint the reasons why we have been reluctant to do more state-wide planning. Perhaps it is because neither teacher educators nor supervisors perceive their roles to include responsibility for these planning activities. Hopefully, the establishment of state advisory committees in compliance with the Vocational Education Amend-

*(Continued on next page)*

*Gene M. Love is Associate Professor and Coordinator of Agricultural Education, College of Education, University of Missouri, Columbia.*

## *From the Editor . . .*

exclusively or principally for vocational education poses some interesting issues. For example, vocational educators and general educators agree, publicly at least, that general and vocational education should be more closely related, each contributing to the other. It is difficult to see how separate vocational schools can enhance complementary relationships between vocational and general education. Vocational education as a part of a comprehensive high school does not insure coordination between general and vocational education. The task seems difficult, if not impossible, when general education courses and vocational education courses are provided in different schools.

It is conceivable that both the regular high school with its primary interest in the so-called general subjects and the vocational school will go their separate ways, each paying little attention to the other. All the two schools may share are those students who elect or are counseled to commute to the area school for specialized courses. Hopefully, an unavoidable schism between vocational and general education is not inherent with separate area schools. Regardless of how many additional students are served, the further separation of general and vocational education will do little to improve the image of vocational education or the students served by it.

Separate area vocational schools may succeed admirably in making available high quality and up-to-date programs to more students. But in so doing the establishment of area vocational schools also may create, or entrench further, a track system whereby students who lack the ability, means or motivation to succeed in the regular secondary school are channeled into an educational program which will unfortunately be considered by many, including some of those enrolled, as second-best. Such a system is inimical both to our system of public education and to the view currently espoused in vocational education that appropriate occupational education should be available to all students.

As we develop agricultural education programs in area schools, we should keep in mind the potential dangers as well as the advantages of a system of area vocational high schools. —JRW

## *Guest Editorial . . .*

ments of 1968 will awaken many of us to a new role.

A similar problem apparently exists at the local level. Many school administrators and most teachers do not view their roles to include the responsibility for assessing the interests of students and adults in their communities or for inventorying the employment and training needs of local industry. In addition to a lack of interest, there are few people at the local level who are prepared to cope with these problems. Consequently, the establishment of area school programs has been more by chance than by plan.

This is not to say that established area schools are of poor quality. We have many area schools which must be classified high in quality. However if we are not careful in planning to continue the establishment of area schools, we may create as many problems as we solve. Without careful planning, what happens when we approach or reach the saturation point in terms of the numbers of schools and programs in each state? Are we likely to encounter serious inequities in the availability of vocational education to citizens in certain areas?

This is why I feel we need to develop State Master Plans for the Establishment of Area School Programs. There should be one plan for all areas of vocational education (agriculture, home economics, business, and other occupational areas). However, each area should be responsible for organizing a system for implementing the plan as it relates to that occupational area.

If state master plans are to be functional, they will need to set up a system whereby: the need for and the selection of programs (agricultural mechanization, ornamental horticulture, and the like) will be supported by all teachers in the area; students interest and industry employment needs can be properly surveyed; adequate provisions will be made for occupational experience programs and for job placement; the adequacy of the area tax base for supporting needed programs; and sufficient enrollment in each program will be assured.

To activate the state master plan for the establishment of area school programs, consulting committees composed of specially qualified supervisors, teacher educators, agricultural businessmen, teachers, and others could be made available to local planning committees. The job of the consulting committee would be to help the local planning committee to carry out the provisions of the State Master Plan.

The adoption of a state master plan approach and the use of consulting committees would enable us to "get the horse before the cart" and to be assured of continued progress in the area school movement.

### Themes for Future Issues

| | |
|---|---|
| March | ***Student Organizations*** |
| April | ***Teaching — Instructional Materials*** |
| May | ***Program Planning and Curriculum Development*** |
| June | ***Public Information Programs*** |
| July | ***Policy and Policy-Development in Agricultural Education*** |

THE COVER PICTURE

Students studying ornamental horticulture at the recently completed Cherokee County (South Carolina) Area Vocational Center are taught plant identification by Fred Wilkins, teacher of ornamental horticulture. The enclosed courtyard garden serves as a laboratory for the class. Agricultural programs are offered in seven of the fourteen area vocational centers operating in South Carolina in 1968-69. Agricultural programs will be offered in seven of the eight additional area centers now under construction. Agricultural programs offered in the area centers include horticulture, agricultural mechanics, forestry, and pulpwood harvesting. (Photo supplied by Wilbur H. McCartha, South Carolina Department of Education)



# A RATIONALE FOR AREA VOCATIONAL EDUCATION CENTERS

R. D. ANDERSON
State Director (Retired) of Vocational Education
South Carolina Department of Education

R. D. Anderson

*This article is from Mr. Anderson's presentation during a National Seminar on Agricultural Occupations Program Development in Area Vocational Schools held at Bowling Green, Ohio, September 1968. Mr. Anderson is a former teacher and state supervisor of vocational agriculture. On August 15, 1968 Mr. Anderson retired after serving fourteen years as State Director of Vocational Education in South Carolina.*

I find it best not to spend much time looking to the past. However, we must occasionally glance backwards to see how far we have come and to determine how far we must go. We have taken great strides and made much progress since the passage of the first National Vocational Education Act in 1917. Yet there is considerable distance to travel if we are to reach the goals we have set and if we are to make adjustments to continuing change. If we are to keep abreast of the times and serve the people to whom we have dedicated our efforts, we must remove any resistance to change that we may have and be prepared to make many adjustments in the days and years ahead.

### Responsibility and Challenge

It is my belief that every man, woman, and child has the right to obtain all the education he or she desires and is capable of acquiring. I believe that vocational educators should provide people of our nation an opportunity to secure the types and kind of vocational education that will prepare them to secure and hold the jobs in which they can become most successful. If this is true, and I believe that it is, we have a great responsibility and a tremendous challenge.

I believe it is both our responsibility and challenge to provide the facilities, the equipment, the personnel, and the instructional programs necessary to provide job-skill training to all high school students, both those who will enter employment after graduation as well as college-bound students. It is also our responsibility to make available continuous educational opportunities for post-high school students and adults to qualify for jobs or to upgrade present skills. I believe this should be done as a part of a comprehensive high school program.

Why is job-skill training so necessary? The reasons are twofold: first, to provide students not going to college with a skill to earn a living; and second, to meet the tremendous manpower needs of agriculture, business, and industry. Today there are more jobs than skilled people to fill them. I make no claim that vocational education can take a high school student and make a highly skilled worker. But studies have proven that we can make a boy or girl employable upon graduation from the twelfth grade. Then it is up to the individual to improve further his or her skills in some form of post-high school education.

I am greatly concerned about the waste of human resources indicated by the high percentage of youth who drop out of school before high school graduation. We should also be concerned with the small percentage of those who do graduate but who do not go on to college or seek other post-high school education. Vocational education cannot solve the dropout problem, but research has shown that sound and attractive vocational programs most certainly lower dropout rates.

### The Area Center Concept

The vast majority of schools in our nation offering vocational education have been limited by finances, space, equipment, and trained personnel to expand and offer the courses demanded by current times. These limitations have made it very difficult for most high schools to provide in a single school system a wide variety of courses to qualify students for jobs in agriculture, business, industry, and other occupational fields. Efforts to find a solution to these limitations led to the development of the area center concept. The Vocational Education Act of 1963 which provided matching funds for construction gave impetus to the development of area centers.

When I speak of area centers, I think of two kinds or types of schools. The first is the area school that offers both vocational courses and the basic or academic courses that qualify students for a high school diploma. The other type is the center where students take their academic subjects in their home schools and are transported to the area center for vocational instruction or related work experience in the school shops and laboratories. Which type of center better serves the people varies with conditions within the states. The density of population and the distance between schools are perhaps the most important factors in making a determination. In South Carolina students take their basic training in their home schools and are transported to the centrally located area center for

*(Continued on page 184)*

# Vocational Agriculture in Area Schools

RALPH J. WOODIN, Teacher Education
The Ohio State University

Should vocational agriculture be offered in area vocational schools? This question has concerned teachers of vocational agriculture, teacher educators, supervisors, and others especially during the past five years. For fifty years vocational agriculture has been most often offered in rural high schools. Vocational agriculture was often the only vocational program offered in those schools.

Many questions arise in considering a move to a new and different home such as the area vocational school. Some questions relate to whether the area school's offering will supplement or substitute for existing programs in nearby schools. There are questions about what clientele will be served by the area school and by the member schools. There are questions as to what curriculums should be offered and what facilities will be needed.

### Importance of Area Schools

The importance of area vocational schools was recognized by Congress in the Vocational Education Act of 1963. This Act, for the first time, placed emphasis on providing funds for the construction of facilities for vocational education and specifically required one-third of the allotment of funds to each state to be used for area vocational school facilities or for programs for persons who had left high school and were available for full-time study.

The recently enacted Vocational Education Amendments of 1968 continues to authorize funds for the construction of area vocational education facilities. In addition, provision is made for funding residential vocational schools and demonstration schools, both of which can also include programs of agricultural education. These developments suggest that interest in area vocational schools on the part of agricultural education will continue for the next several years.

### An Example of an Area School

An example of vocational agriculture in an area school is provided by the Penta County Vocational School at Perrysburg, Ohio. In 1964, nineteen local school districts formed this area vocational center. A 1,400 square mile area and a population of one and one-half million people are involved in this school district which has organized on a single site an area vocational school, a technical college, and an adult evening division.

The high school division enrolls students in grades eleven and twelve. High school students spend three-fourths of the school day on vocational subjects and the remaining one-fourth day on academic subjects. Students are enrolled in their home high schools but spend the entire day at the area center. One-fourth of their time in vocational education is devoted to class work and the remaining half-day is spent in laboratory or occupational work experience.

The Penta County Joint Vocational School offers more than 60 vocational units in its high school program with 29 course offerings leading to more than 300 occupations. A total of 1,117 students are enrolled including 69 in vocational agriculture, 95 in vocational home economics, 209 in business and office education, 39 in distributive education, 518 in trade and industrial education, and 187 in an occupational work experience program designed primarily for disadvantaged students whose needs can be better met at the area school than in their local schools. Buses furnished by their home schools transport 60 per cent of the students. The remaining students provide their own transportation since many are enrolled in cooperative education programs and need private cars for transportation to their work stations.

### Agricultural Education in the Area Center

Vocational agriculture was considered as an offering of the Penta Joint Vocational School from the beginning. The need for coordinating the area center program with that of the eight local programs in vocational agriculture in the constituent schools was recognized also. This coordination began with the involvement of local teachers in planning and surveying the need for vocational agriculture in the area school and with their helping to decide upon curricular offerings. Local teachers also played key roles in guidance of students, planning facilities, and deciding upon adult and young farmer offerings in the area school to supplement local programs. An important result has been that each teacher of vocational agriculture in the area school and in the surrounding area has looked upon the area school as a service center provided by the local schools to enrich and supplement offerings in the local schools.

Prior to the formation of the joint vocational district in 1964, there were 322 students enrolled in high school vocational agriculture programs in the local schools included in the vocational district. In 1968, there were 311 high school students studying vocational agriculture in the local schools in the vocational district. As noted earlier, an additional 69 high school students were enrolled in vocational agriculture programs at the area center. During this same period adult and young farmer enrollment in the local schools increased from 240 in 1964 to 328 in 1968. An additional 60 adults and young farmers were enrolled in programs offered by the area school in 1968. A technical program in agricultural business and service is also offered in the area school with an enrollment of 39 students in 1968.

Altogether the number of persons enrolled in agricultural education courses in the area served by the vocational school increased from 562 in 1964 to 817 in 1968. This is an increase of 50 per cent in an area which most people would have said was well served by departments of agriculture in local schools. The worries of some that the number of teachers would decline and that local departments would no longer be needed did not materialize. Eight vocational agriculture teachers were employed in the local schools in 1964; eight teachers were also employed in the local schools in 1968. In addition, there were eight teachers of agriculture employed in the area school in 1968. Those who have observed the program generally conclude that all teachers in the Penta County area have higher quality vocational agriculture programs than before the area school was formed.

### Some Pros and Cons

When considering area schools it seems desirable to consider their advantages in terms of students and the kind of education they receive. Some have approached area schools on an "either-or" basis assuming that vocational education must be offered either in the regular high school or in the area school. Conant had many supporters when he recommended the comprehensive high school which included offerings in vocational education. Unfortunately, in most states there are only a few schools which are large enough to be classed as comprehensive high schools. Some believe that the area school represents a half-way point which may be used to provide vocational education until such time as truly comprehensive high schools can be organized.

Vocational education in comprehensive high schools provides some advantages which are not found in area schools. In the comprehensive high school, vocational students are not segregated and all students can participate equally in education designed to prepare them for effective citizenship. Academic as well as vocational courses are available to all and provide an opportunity for some to combine vocational and college preparatory courses. More flexible career choices are available in the comprehensive high school and change of career objectives are more easily made. The comprehensive high school may have more prestige in the eyes of students and parents. Another frequently listed advantage is that the study of vocational subjects stimulates interest in academic subjects.

In spite of these advantages, area schools are becoming a part of the educational picture because they offer a broader program of vocational education here and now. Unfortunately for many communities the comprehensive high school lies far in the future, after more consolidation of school districts has been accomplished.

Area schools are not a panacea for providing vocational education. They do offer some advantages when organized and operated in the best possible manner. Area vocational schools make a broader selection of vocational courses available to students; students may be taught by better qualified and more specialized teachers; vocational education is made available to more students since schools which offer no vocational education may be included

*(Continued on next page)*

Ralph J. Woodin

*Ralph J. Woodin served as program chairman for a National Seminar on Agricultural Occupations Program Development in Area Vocational Schools held at Bowling Green, Ohio, September 15-20, 1968. During the seminar 87 participants from 36 states explored ways and means of making effective use of area schools in the development of programs in agricultural education. The seminar, funded by the Bureau of Research, U.S. Office of Education, was sponsored by the Department of Agricultural Education, The Ohio State University, and the Division of Agricultural Education of the Ohio Department of Education. A report of the seminar is being distributed.*

Participants in the National Seminar on Agricultural Occupations Program Development in Area Vocational Schools held at Bowling Green, Ohio, September 1968, toured the Penta County Joint Vocational School, Perrysburg, Ohio. (Photo by Ralph J. Woodin)

## Vocational Agriculture in Area Schools

*(Continued from page 183)*

in the area school; and teaching and learning can take place with appropriate, specialized, and modern buildings and equipment.

### Advantages of Area Schools for Vocational Agriculture

What are the advantages for vocational agriculture in area schools? In addition to the general advantages of area schools, the following are advantages unique to agricultural education in area schools.

—More students can be prepared for specialized jobs in agriculture.

—Students are afforded a wider choice of careers within the field of agriculture through the specialized programs which can be offered in area schools.

—Students see a brighter future in vocational agriculture because the area school provides opportunity for further education in a specialized career or in post-high school and technical training opportunities.

—The area school offers administrators a mechanism for offering the more specialized programs of agricultural education which are difficult to offer in local schools because of the small number of students, expensive equipment, and the need for specialized teachers.

—Planning of agricultural education programs on an area basis is facilitated. The area school concept adds to the former approach of each community planning its own program without regard to the fact that coordination offers many advantages.

### Coordination Essential

Once the decision has been made to include agriculture in the area school, a number of problems must be answered. Perhaps the most important is that of coordinating the area center program with programs in local schools. This coordination needs to begin with the involvement of local teachers planning and surveying the need for vocational agriculture in the area school and in helping to decide what courses should be offered. Agriculture teachers in local schools are often key persons for planning for facilities and for planning for curriculum and other offerings in area schools. They can also help decide what clientele are to be served.

Finally, if we look at vocational agriculture in area schools in terms of its possibility as a means of supplementing good local programs, it would appear that area schools have much to offer. Area schools are not the only means of meeting all the problems of expansion and improvement in agricultural education. But area schools may be the best possible means of enriching agriculture offerings in many sections of the country. The final test should be whether area schools are a means of providing agricultural education to meet the needs of the greatest number of students.

## A Rationale For Area Vocational Education Centers

*(Continued from page 181)*

vocational education and work experience.

The area center does not eliminate previously established courses at the local high school but serves to expand present offerings by adding new courses and special courses that cannot be economically provided in the separate high schools. Area centers are not a device to consolidate all vocational training under one roof or at one location.

### Advantages

The area center offers many advantages over single school programs. The centrally located center:

—Makes vocational education available to more students.

—Is more economical in that only one facility and one instructional staff is needed; one set of equipment serves several high schools.

—Provides for a broader curriculum and gives students a wider choice of courses.

—Provides for more and better vocational guidance.

—Provides for the development of a more flexible vocational curriculum to enable students to receive instruction in other vocational areas which are related to their major fields of interest.

—Improves, with its new and modern facilities, the image and status of vocational education and brings pride and prestige to the community and the students by dignifying preparation for occupational life.

Since the passage of the Vocational Education Act of 1963, much has been and is being accomplished in the establishment of area centers throughout the nation. The 1967 Annual Report of the Department of Health, Education and Welfare states that "Approximately 1,100 area vocational schools have been approved for construction or expansion since 1963 Act funds became available. In fiscal 1966 there were 350 projects funded for construction, expansion, or remodeling of 237 separate school plants. Combined local, state and federal spending for construction during fiscal 1966 was $160,615,345." Provisional reports for fiscal year 1967 indicate funding for 373 projects for construction, additions, or remodeling at a cost of $193,340,578 in local, state and federal funds.

### Area Centers in South Carolina

In South Carolina we have fourteen area centers constructed and in operation with eight more under contract and scheduled to be completed by September 1969. The costs of the twenty-two schools vary from $400,000 to $1,000,000 each. Projected plans call for fifty-two schools within the next five years. To date a total of $13,701,186 has been spent or earmarked for construction of area centers since the passage of the 1963 Act.

As a state director of vocational education, I believe that an area vocational education center should serve all vocational services and should not be designed to prepare people to work in industry alone. Every service should be included in plans for the construction and operation of a center. The center is ideal for providing occupational agriculture to both youth and adults and in some few school districts might well serve both production and occupational agriculture.



# A County-Wide Vocational Agriculture Program for Adults

CHARLES E. MILLER, Teacher
Adult Vocational Agriculture Program
Morganfield, Kentucky

Evaluating a program of vocational agriculture is a difficult task for it is virtually impossible to measure the real accomplishments of an educational program. Yet it is possible to measure, at least with some degree of accuracy, the accomplishments in farming which result in a better way of life for those served by the vocational agriculture program. Even though it is not possible to pinpoint the changes resulting directly from the program, there are some data available which help determine whether farmers and farm people of the community accept and benefit from the program.

### The Beginning

Twenty-four farmers enrolled in my first adult class in 1947. This was in a community where one leader of the community advised that farmers would not attend agricultural meetings, especially if held at night. I found the opposite to be true. Farmers will attend if they believe they can benefit. I believe this is true in most communities.

Study and preparation on the part of the teacher are the keys to good instruction which in turn is the key to good attendance. In teaching over 800 young farmer and adult farmer class sessions, there has not been a single session when I did not spend more than four times the hours spent in classroom teaching in preparing for the session. There have been times when not enough time was spent in preparation, and it was usually reflected in reduced attendance at the following class meeting.

Charles E. Miller

*Charles E. Miller has taught vocational agriculture in the same community for twenty-two years. Twelve years he was a high school teacher; since 1958 he has been a full-time teacher of adults. Mr. Miller conducts a county-wide vocational agriculture program for farmers in Union County, Kentucky.*

### The County Program

In 1958 I began work as a full-time teacher of adults for the entire county. I accepted the task apprehensively not knowing whether successful classes could be organized in three additional communities in the county where adult classes had not previously been taught.

The county school superintendent called a meeting of leading farmers in the various communities, agricultural businessmen, and educators to set up objectives for the expanded program. The group agreed that an expanded vocational agriculture program for adult farmers would encourage more efficient farming operations and improve the economy of the county's agricultural industry.

### Advisory Committee

The planning group decided that each of the four classes organized in the four communities should select a chairman, a secretary, and two additional members to serve as an advisory committee for the class. The chairman and secretary from each of the four classes plus two farmers selected from the county at large by the school superintendent should make up the county advisory committee. The duties of the county advisory committee were to serve in an advisory capacity to the Union County Board of Education relative to the operation of the program and to help the teacher in conducting the program.

With guidance the new classes were organized by the farmers. There have been many questions among teachers

Farmers enrolled in the vocational agriculture programs in 1968 conducted test plots comparing conventional tillage with a no till strip.

relative to the role of advisory committees in vocational agriculture. The county advisory committee, which meets semiannually, has been the core of the adult farmer program in our county. I would not think of continuing the program without the guidance and help of the county advisory committee.

### Enrollment and Attendance

I find that adequate enrollment and regular attendance are not problems. The problem is holding enrollment to a point where one teacher can work effectively with the farmers. Farmers are just as busy with church, civic, and other affairs as people who live in town. Three of the busiest farmers in the community have been continuously enrolled in my adult class for twenty-one years. Following is a summary of enrollment and attendance in the four classes since 1958.

| Year | Number Enrolled | Per Cent Attendance |
|---|---|---|
| 1958 | 110 | 90 |
| 1959 | 114 | 77 |
| 1960 | 105 | 82 |
| 1961 | 113 | 95 |
| 1962 | 129 | 85 |
| 1963 | 135 | 79 |
| 1964 | 152 | 74 |
| 1965 | 157 | 74 |
| 1966 | 165 | 84 |
| 1967 | 171 | 81 |

Until 1962 a farmer was required to

*(Continued on page 187)*

# Extending Local Vocational Agriculture Programs Through Area Schools

ROBERT W. HARRISON
Area Advisor of Agricultural Education
Doylestown, Pennsylvania


Robert W. Harrison

Before discussing secondary and postsecondary programs of agriculture, it is necessary to have a purpose or goal to guide us. Perhaps the best place to look for this purpose is the Act which provides a large percentage of the funds for area programs. The Vocational Education Act of 1963 and the Vocational Amendments of 1968 state these purposes: "To maintain, extend and improve existing programs, and to develop new programs." Neither act mentions "duplicating the same program" as a purpose.

## FEATURES OF AREA PROGRAMS

To me maintain means to keep our present, good agriculture programs in comprehensive local high schools. We should use funds to make local programs stronger and to train students in a more efficient manner. These vocational agriculture programs are excellent and are serving well the needs of students. However, we can extend local comprehensive high school vocational agriculture programs by offering different and more specialized programs of agriculture in the area school. The area school program should also extend agricultural education to students not served by programs in local comprehensive high schools. This can be accomplished by offering specialized courses in areas where agricultural education is now offered or by offering regular agriculture programs in areas where agriculture is not offered in the local schools.

Area school programs in agricultural education should serve certain students better than local high school programs. This is not to say that area programs can serve all students better than local high school programs. It is important to understand that each program should be developed to serve a different purpose.

Our philosophy is that the regular program of agriculture should be taught in the local comprehensive high school and that specialized courses of agriculture should be taught in the area school. Thus, the distinguishing feature of area school programs is specialization.

## SOME EXAMPLES

### Turf Technology

An example of a specialized program is the area program in turf technology in Pennsylvania. This program is a two-year program which has the objective of training a highly competent employee in the knowledge and skill of turf production and maintenance. In less technical language, the objective is to train a turf technician. On the other hand, local comprehensive high school programs have as their objective the training of an agriculturalist.

Note that the objective is limited in scope so as to be accomplished. This is the type of program the horticulture industry has indicated they desire. The turf technology program certainly meets the needs and interests of students who enroll. I feel that students who schedule the course can very quickly determine whether or not they are going to find the course rewarding, challenging, and interesting. We have some students who drop the course while others stay and do very well. The placement of graduates is no problem. We have placed a very high percentage of those desiring placement in the turf industry.

### Other Programs

Turf technology is not the only specialized course offered in Pennsylvania's area schools. We have or will have by 1970 courses in small animal care technology, landscape design technology, floral design technology, nursery production and management, greenhouse production and management, landscape maintenance, agriculture business, produce technology, meat technology, and agriculture equipment sales and service.

### Animal Care Technology

The Walter Biddle Saul High School of Agricultural Sciences, located in Philadelphia, offers a small animal care technician program. This is a two-year program for eleventh- and twelfth-grade students. The objective of this program is to educate students who are interested in working with laboratory animals. The program is not designed to train veterinarian assistants or kennel assistants. We have had outstanding success placing graduates of the program in hospital laboratories, pharmaceutical laboratories, and laboratory animal farms.

## SOME QUESTIONS

I feel that all areas of vocational education should evaluate the time it takes to train a student. Certainly no program should waste the time of a student. We must include all pertinent material, but it is apparent that some programs can and should be cut in length. What is sacred about forty-five minutes per week or thirty-six weeks a year for four years. We must develop programs that benefit students. If a one-year program provides an occupationally trained employee, let us have a one-year program. This is the philosophy we use both in our secondary and adult programs.

## CONCLUSION

There are some who believe that it is a waste of funds to duplicate good local comprehensive high school agriculture programs in area schools. It would appear that the interest of students and the industry could be served better by a different type of agriculture program in area schools. One type of high school course might be a specialized course that would meet the interests of too few students to make the offering possible. However, an area school that serves many schools might make the specialized course in agriculture possible. With specialized courses in area schools, we are able to offer industry well-trained, specialized employees.

Experience in Pennsylvania with the ten area school programs of agriculture shows that industry is well pleased with the graduates. At first industry did not agree to anything other than giving the graduates a chance. One of our difficulties now is not to anger employment personnel when we are required to tell them that all graduates have been placed.

I feel that area school agriculture programs should be specialized courses. These courses should not be longer than is necessary to train a student. The agricultural industry needs trained specialists as well as generally trained agriculturalists. Since the area school serves a larger student population, it is possible to offer area programs that meet the interests of a smaller percentage of all students enrolled.

*(Left)*
A student enrollment in turf technology at Eastern Montgomery County (Pennsylvania) Area Vocational-Technical School mows a golf course green.

*(Below)*
A laboratory technician and the teacher in the area school show a student enrolled in the small animal care technology program the proper way to hold a laboratory animal.

## A County-Wide Vocational Agriculture Program for Adults

*(Continued from page 185)*

attend five class sessions to be enrolled. The advisory committee recommended that the required number of meetings for enrollment be increased from five to six thinking that such a move might stabilize enrollment and eliminate some farmers who were not attending regularly. However, enrollment increased more rapidly. The number of on-farm supervisory visits increased from 480 in 1958 to 709 in 1967.

Farmers attribute the increasing enrollment to the following factors.

—A challenging course of study based on the farmers' suggestions and requests.

—Adequate preparation and resource materials for each class session.

—Follow-up instruction on the farm.

—Punctuality; all class sessions begin and end promptly at the time designated.

### What Is Taught

A major factor contributing to the farmers' interest in the program may be that practically all farmers have corn, wheat, beef cattle, and hogs as their primary farm enterprises. Since corn accounts for either directly or indirectly approximately 70 per cent of the agricultural income of the county, we spend a great deal of time studying and working toward the improvement of this enterprise. In 1958 the average yield of corn for the farmers enrolled in the three new classes was about 51 bushels per acre. In 1967 the average yield of corn for farmers in all four classes was 108 bushels per acre on a total of 41,000 acres.

In 1966, a relatively poor crop year, we made a study to determine the relationship between the number of years a farmer had participated in the adult program and the average yield of corn per acre. With all farmers enrolled in the program including in one of the following groups, the results were as follows:

| Number years enrolled | Bushels per acre |
|---|---|
| 9 years or more | 102 |
| 3 to 8 years | 90 |
| 2 years or less | 77 |

Farmers enrolled in the program grow an average of 244 acres of corn. So from these data one can easily see how much the corn production portion of the course of study has meant to those who have taken part in the program.

### Operation and Administration

There have been no rigid policies established for the conduct of the program. The farmers feel that the program in theirs and that they have freedom to operate with the board framework of policies of the State Department of Education and the local school board. They believe the program is being operated for their benefit and for the welfare of the county.

The program has grown in enrollment to such an extent that adequate individual on-farm supervision has become a major problem. Telephone calls and requests for supervisory visits grow more numerous each year. I have partially worked out this problem by reducing the time spent with individuals on their farms.

A day's work is long, often beginning with telephone calls by 6:00 a.m. and ending after 10:00 p.m. Despite the endless hours of work, much satisfaction comes from the realization that the vocational agriculture program for adults has, in some degree, helped many farmers to a better way of life. I believe that is, in reality, the objective of vocational agriculture.

# REGIONAL VOCATIONAL AGRICULTURE CENTERS IN CONNECTICUT

LLEWELLYN L. TURNER and ROBERT E. BENNETT
Connecticut Department of Education

The year 1906 marked the beginning of vocational agriculture in Connecticut when a private institution added agriculture to its curriculum. The first public school agricultural program was organized in 1912 and was supported entirely by local funds. A plan was then adopted for the State to pay the salary of the teacher of agriculture with the towns providing facilities, equipment, and supplies. From 1917 to 1956 almost all of the agricultural programs in Connecticut followed this plan. These programs served well for a beginning, but they were not completely satisfactory since only a local area was served. Inadequate facilities with little or no equipment hindered the further development of programs with this policy.

## CONSULTING COMMITTEE

In 1954, a state-wide Vocational Agriculture Consulting Committee was formed at the request of the State Board of Education to study the status of vocational agriculture. Based on their findings, the committee was to submit recommendations to the State Board of Education for the further development of vocational agriculture. The committee recommended the establishment of Regional Vocational Agriculture Centers which would provide training in agriculture to anyone in the state who desired it.

### Findings

The committee found that only one-third of the major farm towns in Connecticut had four or more students enrolled in vocational agriculture. Many youth interested in agriculture, especially college-oriented youth, were not enrolling in agriculture. There was a feeling in many communities that existing programs were not geared to agriculture's needs. They found poor facilities and limited equipment. Even though the number of farms was decreasing, agricultural production was increasing. Connecticut's agriculture was becoming highly specialized; there was a rapid increase in mechanization on farms. The committee found an acute shortage of professional and semi-professional personnel in agricultural service occupations.

### Needs

The committee's study revealed that diversified programs were needed which provide agricultural education opportunities for all interested rural and urban youth. There was a need for challenging programs which allow students to specialize in an area of major interest. Also educational programs were needed for students interested in agricultural service occupations. The committee saw a need for more emphasis on agricultural mechanics.

The committee found the need for continuing education in agriculture so those in farming could increase their skills. There was a need for planning programs that were related to local needs.

### Recommendations

The Consulting Committee recommended regional centers for vocational agriculture with each center having modern facilities including shop, laboratory, library, classroom, greenhouse, and land laboratory. They recommended that local advisory committees be formed to help develop plans, select equipment, and develop courses of study.

A broad curriculum in vocational agriculture was recommended which provided instruction for students with different objectives and different areas of interest, including a special program for students planning further education on the professional or technical level in the agricultural sciences. An expanded program for out-of-school youth and adults was recommended with increased emphasis on farm business management and agricultural mechanization.

The committee recommended occupational experience programs for all phases of vocational agriculture, flexible scheduling, and specialized curriculum materials. A more specialized staff with more emphasis on in-service education was recommended. The committee also recommended closer working relationships with school administrators and guidance counselors and a greater degree of lay citizen involvement in the agricultural education program.

Llewellyn L. Turner

*Llewellyn L. Turner is Consultant, Agricultural Education, and Robert E. Bennett is Associate Consultant, Program Development, in the State Department of Education, Hartford, Connecticut.*

Robert E. Bennett



## REGIONAL CENTERS

As a result of these recommendations, the 1955 session of the Legislature enacted legislation providing for the establishment of regional centers for vocational agriculture in Connecticut. The legislation provided that any local board of education could assume the initiative in indicating its willingness and interest to operate a regional vocational agriculture center. This local board and boards of education in other towns cooperating in the establishment of a regional center were asked to appoint representatives to a committee for the development of the regional center.

The committee was charged with the responsibility of determining the need for a regional center and its location. The committee reports its findings and recommendations to the operating board of education which, in turn, applies to the State Board of Education for approval to establish a regional center.

### Funding

Upon approval, the State Board of Education provides a grant up to $200,000 for constructing and equipping the regional center. The authority and responsibility for the operation of the regional center rest with the local board of education governing the high school at which the center is located.

State funds are provided for reimbursement of the costs incurred in operating vocational agriculture centers. Excess costs incurred by a school system in operating a regional vocational agriculture center are the basis for the formula used in determining the amount of reimbursement from state aid. Reimbursement also includes the total cost of agricultural education programs for out-of-school youth and adults. In addition, state funds are available to pay 100 per cent of the cost for expanding existing facilities and for adding or replacing equipment in regional centers.

### Tuition and Transportation

Cooperating school districts which send students to the regional vocational agriculture center must pay a tuition charge which represents the per pupil operating cost of the high school in which the center is located. The state reimburses the sending school towns 50 per cent of the tuition charge. Under state legislation, a town must spend up to $400.00 per student per year for transportation to a center. The state reimburses 50 per cent of the cost of transportation, not to exceed $200.00 per student, to the sending towns.

A guiding principle of the legislation establishing regional centers was to see that no town suffered financially because it was operating a regional center. Also the legislation was designed to encourage towns to develop centers and to invite sending towns to participate.

Modern classroom facilities, equipment, and instructional materials are provided in Regional Vocational Agricultural Centers in Connecticut. (Photo by Llewellyn L. Turner)

## THE PICTURE TODAY

Connecticut's first regional vocational agriculture center began operation at Woodrow Wilson High School, Middletown, with three teachers in September 1956. At that time, there were 18 other locally operated programs in the state with 22 teachers. These programs served 528 high school students and 174 out-of-school youth and adults who came from 36 of the 169 towns in Connecticut. Now ten years later, there are fourteen regional centers plus three single-teacher, locally operated departments in high schools with a total enrollment of 914 high school students from 102 Connecticut towns. In addition, 392 adults are enrolled from 47 different towns. There are now 43 full-time teachers of agriculture in Connecticut.

Regional vocational agriculture centers were established to meet the challence provided by a changing production agriculture and people's needs for recreation, conservation, and a host of other related agricultural services. Suburbia brought the need for many new programs in agricultural education.

Specialized programs are now in operation or being developed for both high school students and adults in such areas as care, operation, and servicing of home grounds maintenance equipment; greenhouse management and operation; floral design and flower arrangement; nursery management; landscaping; turf management; sales and services of agriculture supplies and products; forestry; and wildlife. Studies are in progress to determine the need for developing specialized programs in some of our heavily populated areas where the major emphasis will be on ornamental horticulture.

Connecticut's regional centers with excellent facilities, equipment, and a multi-staff which are operated as part of comprehensive high schools provide the structure to devclop realistic programs in agricultural education which could not be accomplished in any other way. Many have said that if policy governing this plan for vocational agriculture in Connecticut had not been adopted and implemented by the State Board of Education in 1956, vocational agriculture in all likelihood might have become nonexistent.

There is still much to be done. The key to the success or failure of any of these programs lies largely with teachers of agriculture who have been inspired to meet this responsibility for change.

# PREPARING AGRICULTURAL RESEARCH TECHNICIANS

AVRON B. UPCHURCH
Central Carolina Technical Institute
Sanford, North Carolina

Since World War II there has been a strong demand in agriculture and related industries for technically trained persons. This is the result of the technological changes which are taking place in agriculture. Until recently most of these jobs have been filled by graduates of the four-year agricultural colleges. However, the demand for professionally trained persons in agriculture has become so great that four-year colleges cannot meet the demand. The agricultural college graduate must be supported by technicians.

There is a great need for persons trained as agricultural research technicians and research assistants. For example, the Superintendent of the North Carolina State University Research Farms estimates that there are over 300 persons employed by the University and the State Department of Education as research technicians and assistants. In addition there are employment opportunities for research technicians in business firms that are involved in research such as agricultural chemical companies, fertilizer, seed, and feed companies, and cooperatives.

### Agricultural Research Program

To help meet the need for agricultural research technicians, Central Carolina Technical Institute offers a unique two-year technical program in agricultural reasearch. General education courses completed by students in the agricultural research program include English, mathematics, chemistry, and social science. Courses in the major field include animal science, plant and crop science, soil science, forestry, insects, agricultural chemicals, plant and animal diseases, and horticulture. Introduction to research, special research problems and agricultural statistics are also studied.

Specific objectives of the curriculum include teaching management procedures from seedbed preparation to harvesting experimental plots, interpreting research data, and preparing technical reports. Students are taught to diagnose and analyze problems of research and to perform laboratory techniques.

### Supervised Experience

During the summer between a student's first and second year, each student participates in supervised work experience on an experimental farm with a commerical, private, or educational agency. Students are paid for this work. There are sixteen research stations in North Carolina from which students may choose to work during the summer.

Central Carolina Technical Institute has five acres of land which is used for field trials and crop testing. Tests on herbicides and fertilizers are conducted annually on several varieties of soybeans, grain sorghum, corn, sudangrass, and strains of bermuda grass. Management practices are tested using fruit crops such as peaches, apples, grapes, and strawberries. Each student in the agricultural research program is responsible for one field or forage crop and one horticultural crop and does all the planting, managing, harvesting, collecting of data, and reporting on the project.

### Facilities

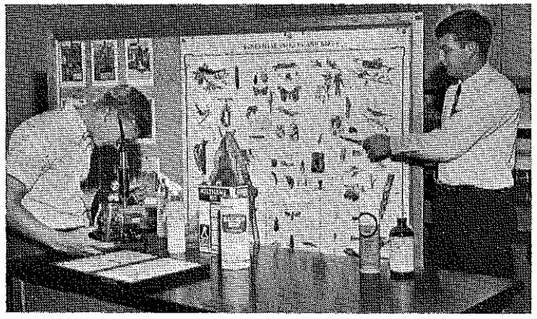
We have modern facilities and equipment for the agricultural research program. At the beginning of the 1968-69 school year, a new building was completed which includes laboratories for chemistry, biology, and physics plus facilities for the animal science and veterinary-medical departments. There is a modern life science laboratory for the agricultural science courses.

Equipment includes a late model tractor with all necessary equipment for production on test plots and research projects. We also have a crop sprayer, soil fumigant applicator, and an environmental chamber for the production of insects and plants under controlled environmental conditions.

A greenhouse is used to produce seedlings for the experimental plots and to grow laboratory specimens. Research projects are also conducted in the greenhouse.

### Employment

Upon graduation from the agricultural research program students receive an Associate of Applied Science Degree. Graduates can expect a starting salary of approximately $5,500. Employment opportunities for a graduate of the agricultural research program include research technicians with seed, feed, fertilizer, and chemical companies; pest and parasite control assistant; equipment operator; Peace Corp Workers; farm supply salesman or serviceman, and technicians with the U.S. Department of Agriculture and state departments of agriculture.



Students in the Agricultural Research Technology Program study identification and control of insects.



# A CHALLENGE: Developing Effective Programs in Junior College Teacher Education

GERALD R. FULLER, Teacher Education
University of Vermont

Teacher educators in agriculture may have inherited a potential problem regarding their relationships with junior college personnel.[1] Reading the literature regarding junior colleges, one finds that junior college personnel have in the past viewed institutions of higher education as being oriented toward the preparation of secondary school teachers and administrators and the conduct of research oriented doctoral programs. Those involved in junior college education have been somewhat critical of the help received from senior institutions of higher education.

### The Challenge

Institutions of higher education must accept some of the criticism which has been voiced by junior college personnel. Generally, teacher education has been focused almost exclusively on the needs of the common schools and the senior colleges. Perfunctory recognition has often been given to the junior college through innocuous course offerings such as "The Junior College," "History of Junior Colleges," or "The Philosophy of the Junior College." There has been a dearth of systematic course offerings in such areas as methods of teaching in the junior college, psychology of learning of the junior college student, or student teaching in the junior college. Junior college personnel usually have been asked by teacher educators to relate secondary school focused course work to post-secondary needs. Due to course content this transfer of orientation has not always been easily accomplished.

Agricultural educators have a history of recognizing and meeting the needs of the educational profession. Teacher educators in agriculture are presently in a position to provide leadership in the development of an educational program in senior colleges which will serve junior college personnel. This leadership must be visible to junior college personnel to overcome the traditional image that senior colleges are not concerned with the post-secondary movement. Teacher educators must become closely associated with junior college personnel and familiar with the organizational structure and philosophical framework within which junior college educational programs are conducted.

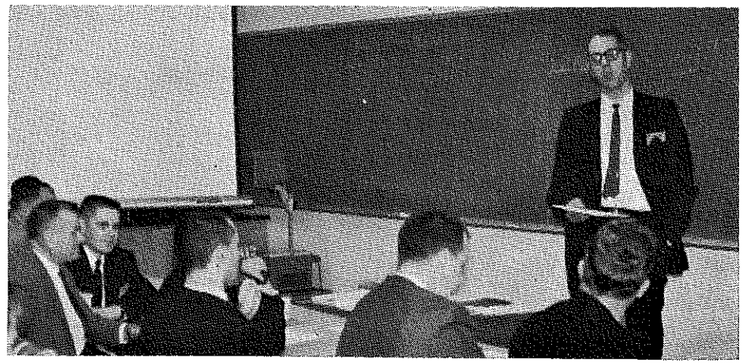
### Effective Techniques

A promising approach to developing rapport with and meeting the needs of junior college personnel has been developed at the University of Illinois as part of a growing educational program designed to serve junior college vocational and technical educators in agriculture. In-service education courses have been initiated by the Agricultural Education Division for newly employed and for experienced junior college teachers of agriculture. These courses are designed to include both group instruction on the University of Illinois campus and individual instruction on the junior college campuses where the enrollees are employed. The university staff and the junior college personnel have been able to establish a common ground for discussion based upon real situations. The personal contact with junior college teaching personnel and their administrators has been extremely well accepted. There is no doubt in the minds

*(Continued on page 193)*

[1]The term "junior college" in this article is synonymous with community college, technical institute, and post-high school area vocational center.

*At the time this article was written Gerald R. Fuller was an Assistant Professor of Vocational and Technical Education in the Agricultural Education Division at the University of Illinois. In August 1968, Dr. Fuller was appointed Chairman of the Agricultural Education Department at the University of Vermont. In this picture Dr. Fuller is teaching a group of junior college teachers at a workshop held on the campus of the University of Illinois.*



# Generating Effective Programs in Area Schools

WILLIAM L. HULL, Teacher Education
Oklahoma State University

The concept of area schools for vocational education attempts to provide comprehensive yet diverse programs of occupational preparation. Essentially, the area concept is a mechanism for funding. It brings together a volume of students, a broad encompassing tax base, and specialized practical teachers to develop and refine a product in demand by business and industry. The effectiveness of an area school program in vocational education depends on the resources it commands as well as the philosophic commitments of its leaders.

### The Aim

Area school personnel must be committed to meeting the vocational and technical needs of *all the people*. National legislation declares ". . . that persons of all ages in all communities . . . will have ready access to vocational training or retraining . . ." This means that rural youth as well as inner city youth should have the same opportunity to pursue vocational or technical training as other youth. The increased cost of travel or the inadequate tax base of ghetto schools can no longer be allowed to limit opportunity for occupational preparation.

### Course Initiation in Area Schools

An efficient state-wide system of post-high school course offerings in vocational and technical education imposes constraints on the initiation of programs in local schools. Offering a highly specialized curriculum in an optimum location requires the identification of an area school most likely to obtain sustained enrollment. Procedures must be developed to enroll persons in the program who need it regardless of where they live in the state. Such a systematic approach to vocational and technical education requires much coordination. Few states have devised efficient operations.

This can be done only when directors of vocational education consultant relevant state agencies on occupational training needs. Figure 1 provides a schema for channeling suggestions for course initiation. Someone has an idea for a course to be initiated. Such an idea could come from a single employer in a school district, a trade group such as the Farm and Power Equipment Dealers Association, or from within an area school department. The idea may be reviewed by the state agency responsible for employment security before it is passed on to the director of vocational education. The director validates the demand for such a course with employment security before submitting the proposal to the state-wide curriculum coordination committee.

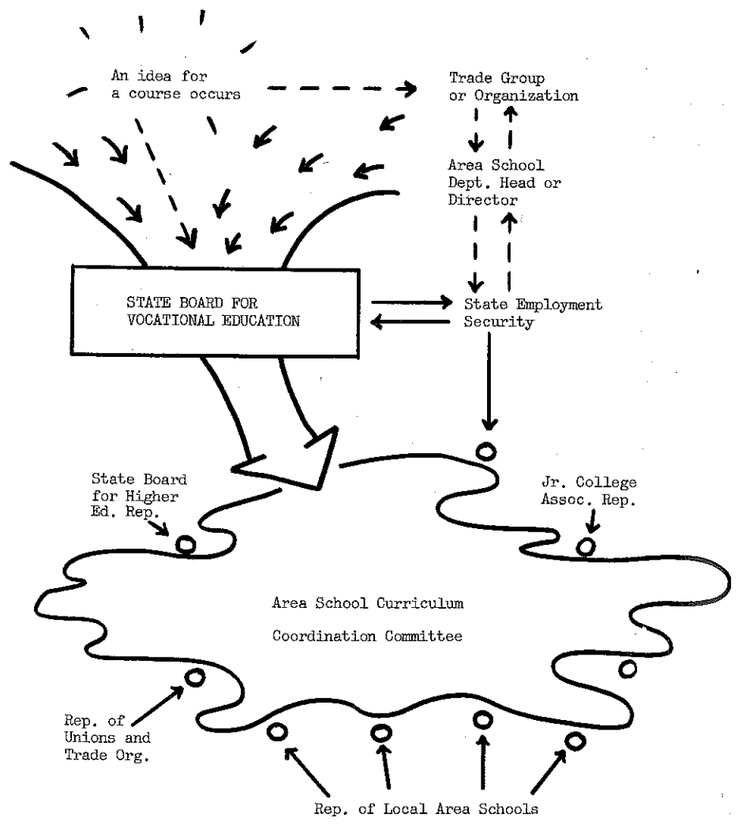



**Figure 1**
**Flow Chart for Course Initiation in Area Schools**

Such a committee serves as a clearing house of ideas. Representatives from the State Board for Higher Education, the Junior College Association, trade and industrial organizations, Employment Security, and other groups exchange information. Where to locate a program and at what level (high school, junior college, or adult) are decisions which should be influenced by members of the committee.

### Complement Not Duplicate

Occupational needs within the state could be met by the appropriate level of educational institution. Technician-level training would be taught at post-high school institutions. Saturation of the labor market could be controlled by eliminating duplicating efforts. Low volume, high cost programs would be located near employment opportunities. Program participants from all areas of the state would expect to have equal opportunity to enroll in the course.

Area school educational programs extend the ability of the public school system to prepare youth for occupations. Area school systems are not intended to divide adolescents into categories labeled "vocational" and "academic." Rather, the role of the area school is one of making the public school system more comprehensive and more available to all youth.

Increasingly, area schools are developing programs for students who cannot profit from regular classes in small high schools. Students in need of rehabilitation can be grouped together in classes of sufficient size in area schools to justify specially trained teachers.

High school students who need to earn money while attending school find three-hour time periods ideal for cooperative occupational experience programs. These students work in businesses under the supervision of both the training station manager and a qualified teacher-coordinator from the school system.

### Features of Effective Programs

—The program begins at the participant's level of knowledge.
—Area school programs attend to the labor market demands.
—The curriculum discourages poverty, occupational obsolescence and geographic immobility.
—The learning experiences increase the student's desire for more learning.
—Area schools do not duplicate high school programs; rather they supplement and extend vocational education for greater job proficiency.
—The program admits students on the basis of need for the training rather than on race, color, or geographic location.
—Maximum use is made of equipment and facilities.

The impact of an extended system of vocational and technical education emphasizes the need for adequate vocational guidance in high schools. High school students selecting specialized proficiency-orientated area school programs must know enough about the occupation to select the appropriate curricular offering. This requires the student to have a knowledge of himself and an awareness of the occupational structure of society. Hopefully, vocational programs in high schools can meet this challenge.

*This article is based on a paper presented by Dr. Hull at a National Seminar on Agricultural Occupations Program Development in Area Vocational Schools held at Bowling Green, Ohio, September 1968.*


William L. Hull

## Developing Effective Programs in Junior College Teacher Education

*(Continued from page 191)*

of the junior college personnel about the sincere interest in junior college education possessed by the university instructors.

The group instruction in these courses is focused upon the needs of the junior college personnel enrolled. The use of resource persons who are directly involved with junior colleges, or problems associated with junior colleges, is a strong point in the design of courses. Representatives of the Illinois Junior College Board, the State Board for Vocational Education and Rehabilitation, The North Central Association of Colleges and Universities, the Colleges of Education and Agriculture, the U. S. Office of Education seminar program for post-secondary education in agriculture, and personnel from agricultural businesses have been used in the role of resource persons. This technique also has been well received by the junior college teachers, their administrators, and the resource persons themselves. The involvement of persons working in and with junior colleges has helped establish a good rapport between the Agricultural Education Division staff and junior college personnel at all levels.

### Summary

The traditional image of teacher education held by many junior college teachers and administrators is not as favorable as one might expect. This less than favorable image may be due in part to the partial failure of teacher educators to fully recognize and meet some of the unique needs of junior college faculties and administrators. Junior college personnel are usually not apathetic regarding teacher education but they have seen no real systematic effort being made to focus on their problems. Teacher educators in agriculture, junior college teachers, and junior college administrators can work together in the development of purposeful professional education programs. The time to start is now.

Keith W. Stoehr

# Technical Education in Horticulture

KEITH W. STOEHR, Director
Kenosha Technical Institute
Kenosha, Wisconsin

Kenosha Technical Institute was chosen by the Wisconsin State Board of Vocational, Technical and Adult Education to develop the first associate degree horticulture programs in the state. Florists, growers, and horticulturists in Wisconsin and Upper Michigan requested the program to relieve the serious shortage of trained workers in the area of horticulture. State and local advisory committees including persons in the industry worked with educators in developing plans for buildings, equipment, and curricula.

### Curriculum

All associate degree candidates at Kenosha Technical Institute are required to take these core courses: American institutions, economics, psychology of human relations, speech, and written communications. All horticulture majors also have these courses in common: basic horticulture, plant diseases and pests, soils and plant nutrition, floriculture, and business organization.

In the second year students majoring in horticulture production take horticulture I and II, greenhouse operation, crop management I and II, turf and lawn management, introduction to landscaping, garden plants, small power equipment, and electives. Horticulture retail majors in their second year take fundamentals of color, line and design, salesmanship, basic flower shop operations, accounting for business, customer service, advanced design, display, advanced flower shop operations, and electives. During the summer students work as interns in the horticulture industry for part of their elective credit.

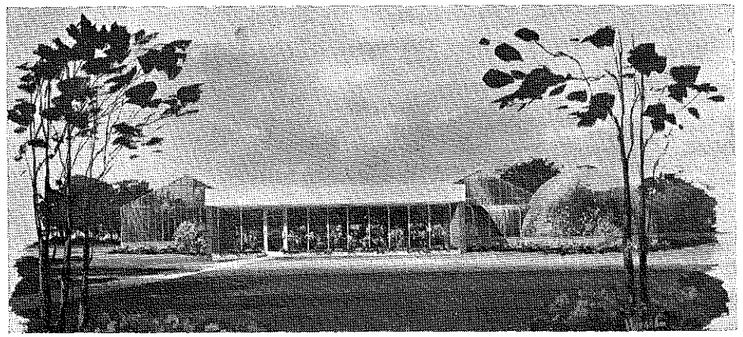
### Facilities

The technical institute was already being built when the horticulture programs were authorized. The school located on 50 acres, had four buildings completed when the horticulture programs were approved. Construction began immediately on the horticulture center which includes two greenhouses, a simulated retail florist shop, and a conservatory. Outdoor space is allotted for growing assignments and turf development. The accompanying photograph shows the horticulture center which is separate from the other buildings on campus.

The two greenhouses, each 28' x 62', are used primarily by the horticulture production students. A plexiglass domed conservatory, 25 feet in diameter, displays a variety of plants donated by an enthusiastic grower for the dedication ceremonies. Custom made shades and sophisticated controls are used in the conservatory. The greenhouses have various climate controls, watering devices, a carbon dioxide generator, and other equipment donated by the horticulture industry. Cost to the taxpayers for the horticulture center was a modest $155,000.

### Area Districts

Through legislation in 1911, Wisconsin was one of the first states to provide a state-aided program of vocational, technical and adult education. Equally important legislation in 1965 requires that all areas of the state be in a vocational, technical and adult education district by 1970. The schools operated by the vocational, technical and adult education districts include the area of one county or more. This system of education broadens the tax tase considerably making it possible to offer educational programs to more people on a tuition-free basis. Kenosha Technical Institute began operation in 1966 as one of the first two area districts of this type formed in Wisconsin.



ARCHITECTURAL RENDERING OF THE HORTICULTURE CENTER AT KENOSHA (WISCONSIN) TECHNICAL INSTITUTE. The florist shop lies across the front of the building, flanked by two greenhouses toward the rear. The conservatory (right) is connected to the florist shop by a glass enclosed corridor. Large recessed windows with outdoor planters reveal the entire shop area which is complete with display areas including a lighted, refrigerated display case, customer service counter, and cash register. Planned lighting and carpeting create a realistic and pleasant atmosphere. Behind the florist shop is the workroom and classroom area.



# COORDINATING SECONDARY AND POST-SECONDARY PROGRAMS

T. O. BEACH, County Coordinator
Vocational-Technical Education
Yuma, Arizona

T. O. Beach

It is recognized that for many years vocational education in agriculture has been presented to secondary school students in a very fine and efficient manner. It is also recognized that there are excellent programs of agriculture offered at the post-secondary level. But it should be recognized that there is need to coordinate these two programs of vocational education in agriculture so that they will complement each other.

### Coordination of Programs

Since junior college programs are of recent vintage, the junior college should take steps to insure that its programs are planned around what is already offered. In doing this the junior college can plan programs that are aligned with other educational institutions already offering programs thereby allowing students to move through the educational system on a continuous basis without serious adjustment problems or loss of college credit. In many instances the programs of agriculture in junior colleges have been developed independently of those already being offered in the community.

I feel that there should be closer cooperation in the planning and implementation of programs. In some instances junior college programs in agriculture have been identical with those offered by other educational institutions even though the position which the junior college occupies on the educational ladder indicates that its program should be geared to an educational level somewhere between the secondary school and the four-year institutions. Because of the lack of coordination of junior college and senior college agricultural programs, junior college students lose college credit and are required to repeat courses or take additional course work before proceeding to the regular program. We must also recognize that the purpose of the junior college program is not solely to prepare for a four-year institution. We must recognize that the primary purpose of an agricultural program in the junior college system should be to supply the terminal courses necessary to meet the needs of technical agriculture in a particular community.

### Community Programs

Even though the junior college is an autonomous unit in the education system, its agricultural education programs should not be planned independently of those offered by other institutions. Special consideration must be given to the curricular offerings in agricultural education at the various educational levels when planning the junior college program. Since an increasing number of secondary school students continue their education in the junior college and, as more junior college students transfer to senior institutions, greater attention should be devoted to the problem of articulating agricultural education programs.

The development of junior college agricultural education programs which will serve the needs and desires of all is such a vast and complex problem that agricultural educators can no longer rely entirely upon their limited knowledge and experience. Constant and widespread modification of agricultural occupations in recent years has accentuated the need for a closer relationship between the junior college agricultural education programs and the community. As changes in agriculture programs become more pronounced and problems encountered in planning and revising agricultural education programs become increasingly complex, extensive use should be made of follow-up studies of recent graduates, cooperative work programs, job surveys and analysis and advisory committees composed of representatives from the junior college, secondary schools, and community. Frequent contacts with the community are necessary and should result in information relative to the nature and scope of agricultural education programs, the duration of the programs, and close liaison between the junior college and the agricultural organizations which employ the graduates.

### Cooperative Planning

Agricultural education leaders at the various educational levels should hold frequent conferences to reach agreement on the proper sequence and placement of agricultural subjects. The articulation of junior college agriculture education programs with those offered by secondary schools and senior colleges and universities should result in the realinement of the junior college agriculture programs.

Junior colleges should maintain a close relationship not only to secondary schools and senior colleges but also to the community. The philosophy of junior college education encompasses the idea that its offerings should not exclude any significant or sizeable segments of the community and that they should bear a close relationship to the unique characteristics of the local community.

### Some Suggestions

I offer the following suggestions for improving the articulation of secondary and post-secondary programs in agricultural education.

—Inclusion of high school teachers in advisory committees.

—Increased visitation between high school and college faculties.

—Summer workshops offering an opportunity for college and high school faculties to work together.

—Establishment of joint curriculum committees in each of the technical fields.

—Specialized courses offered by the college to assist teachers in professional and academic advancement.

# Operational Procedures for Multiple-Teacher Departments of Vocational Agriculture

DONALD E. ELSON, Graduate Student
Michigan State University

The number of multiple-teacher departments of vocational agriculture in Kansas doubled from 1963 to 1968. This is the result of programs being offered which were broader in scope and of interest to more students including programs in agricultural occupations made possible by the Vocational Education Act of 1963 and increased emphasis on young and adult farmer programs. Another factor contributing to the number of multiple-teacher departments in Kansas is the unification of small rural high schools. The continued improvement and expansion of existing programs, development of new programs, and unification of the smaller rural schools will continue to increase the need for more multiple teacher departments of vocational agriculture.

### Research

This article reports research conducted to study and develop procedures for establishing and operating multiple-teacher departments of vocational agriculture. The study was designed to compare the opinions of four groups concerning the operational procedures of multiple-teacher departments of vocational agriculture. The four groups were teachers and administrators with experience in multiple-teacher departments of vocational agriculture in Kansas; the state supervisor of agricultural education in each state; and the head teacher educator of agricultural education in each college or university preparing vocational agriculture teachers. Data were obtained by a mailed opinionnaire. The sample consisted of 41 teachers, 21 administrators, 49 supervisors, and 76 teacher educators. Eighty-two per cent of the respondents returned the opinionnaire.

### Some Conclusions

—An additional teacher could be justified because of a high demand for young and adult farmer courses.

—A high demand for specialized training of high school students could justify an additional teacher.

—Teachers, administrators, and state supervisory personnel should all have a direct role in the development of policies for multiple-teacher departments.

—Assignment of teaching duties should be made through the cooperation of all teachers and the administrator. Assignments of duties should be in writing. A definite assignment should be made concerning reports.

—Students should be grouped according to year in school and taught by teachers specializing in particular areas.

—Supervisory visits should be made by the teacher with a specialization which corresponds to the student's needs. At least one hour should be scheduled during each school day for visitation.

—A multiple-teacher department should not have more than one FFA chapter and all duties of the advisor should not be assigned to one teacher. The training of teams should be the responsibility of the teacher with an interest in the particular area.

—Advisory councils are necessary for effective operation of multiple-teacher departments.

—Each teacher in a department should have a separate classroom, but one shop would be sufficient with one teacher responsible for stocking the shop supplies. Scheduling the use of facilities and equipment should be a shared responsibility of the teachers in the department.

—One teacher should be selected as head teacher by the administrator with the approval of the teachers in the department. The head teacher should have the authority to make decisions within the policies of the school and should receive compensation for those added responsibilities in monetary form or by reduction of his teaching load.

Donald E. Elson

*Donald E. Elson taught vocational agriculture at Kinsley, Kansas, from 1958 to 1967. In 1967-68 he served as a graduate research assistant with the Kansas Vocational Education Research Coordinating Unit. This article is based on his M. S. thesis completed at Kansas State University in June 1968. In September 1968, Mr. Elson began study toward a doctorate in Agricultural Education at Michigan State University. He holds a half-time teaching and counseling appointment with the Institute of Agricultural Technology in the College of Agriculture at Michigan State University.*



# BOOK REVIEWS

GERALD R. FULLER, Special Editor
University of Vermont

PRODUCING VEGETABLE CROPS by George W. Ware and J. P. McCollum. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1968. 558 pp. $6.50

Vegetable production is big business and will continue to be as long as America maintains the prestige of being the best fed nation in the world. In writing this book, the authors combined their talent obtained through research, experimentation, and study into an up-to-date book which can be used as a guide in the modernization of the vegetable producing industry.

The book is divided into two sections. Section one deals primarily with the principles underlying the vegetable producing industry. Topics include: physical factors and requirements of different vegetables; effect of the classification of vegetables upon their growth and production; principles of plant growth and the factors that contribute to or retard growth and development; breeding practices used to obtain desired plant characteristics; benefits derived from the use of good seed; why soil management is necessary for profitable vegetable production; the importance of the production of quality plants; methods of transplanting and planting; the importance and methods of cultivation and rotation; irrigation and mulching; controlling insects and diseases; storing vegetables; and techniques of harvesting, packaging and marketing vegetables.

Section two deals with specific jobs required in the production of vegetables, including home garden production. The jobs are: selecting varieties and seeds; selection and preparation of the soil; fertilizing, manuring and liming; starting plants under protection and seeding in the open field; cultivation and irrigation; controlling insects and disease; and harvesting, handling and marketing.

*Producing Vegetable Crops* is a practical book in every aspect. It eliminates unnecessary preliminaries and proceeds directly into the specifics of vegetable production. It is thorough down to the minute details. The book provides easy reading and will challenge the interest of high school students, junior and senior college students, and commercial vegetable farmers as well as home gardeners.

R. F. Faucette
State Department of Education
Little Rock, Arkansas

PLANT PROPAGATION: PRINCIPLES AND PRACTICES by Hudson T. Hartmann and Dale E. Kester. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968. 702 pp. $14.00

The first part of this book deals with the general aspects of propagation and propagating structures. Sexual reproduction principles and practices are covered in the second part of the book. Asexual propagation including cutting, grafting, budding, layering, and the handling of specialized stems, roots, and bulbs are covered in the third section of the book. Aseptic methods of micropropagation are described in the fourth section. The last three chapters are devoted to the propagation of fruit and nut species, ornamental shrubs, shade trees, woody vines, and selected annual and herbaceous perennials. In this part of the book propagation methods are described on an individual plant basis.

This book contains information on the art of propagation, the science of propagation, and the characteristics of various plants. Thus, it has much to offer both the practitioner and the theorist, the amateur gardener and the professional horticulturist, and the student and the teacher. Both the how and the why of propagation are included in this book.

The authors are professors of pomology at the University of California, Davis. Each has distinguished himself as an author, scholar, and researcher. Their first edition of this book has been widely read and used throughout the world.

This book can be used as a text for plant propagation courses at the junior college and senior college levels. At least one copy should be on the shelves of every high school where horticulture, biology, or plant science courses are taught. It should serve as an important source of information for professional horticulturists and amateur gardeners.

Paul E. Hemp
University of Illinois

PLANNING FARM FENCES by G. E. Henderson. Athens, Georgia: American Association for Agricultural Engineering and Vocational Agriculture, 1966, 53 pp. $1.40.

This publication, prepared initially in 1954, has been revised to include the latest information on fencing. This paperback appears well suited for use in high school and adult classes.

The latest information on planning a fencing layout and selecting the equipment and materials needed for field fencing is covered under these headings: Location and arrangement of fences; Kind of fence to use; Quality of fencing materials; Electric fence controllers; End or corner construction; Number and kind of line posts; Types of passageways needed.

Pictures, drawings, and tables are used generously. For example, in dealing with factors which determine the kind of fence to use, ready reference can be made to a comprehensive table on comparative cost index, life, upkeep and type of livestock for which the fence is effective; a wire size table; and fence tag illustration.

Wire and board fences, fasteners, and bracing are all well illustrated and adequately discussed. The kinds of posts available, both metal and wood, their characteristics, treatment and use are given good coverage.

The book is concisely written and covers the subject well. A generous use of color enhances the clarity and attractiveness of this publication.

C. O. Loreen
Washington State University

# Characteristics of Students in Technical Agriculture Programs

WILLIAM J. BECKER, Teacher Education
University of Florida
and
RALPH E. BENDER, Teacher Education
The Ohio State University

Ralph E. Bender

*This article is based on William J. Becker's Ph. D. dissertation, "Technical Agriculture Programs in Ohio with Emphasis upon Student and Program Characteristics," which was completed at The Ohio State University in 1968. A summary report of the study is available from the Department of Agricultural Education, The Ohio State University, Columbus, Ohio 43210.*

William J. Becker

Students and graduates of technical agricultural programs in Ohio are well pleased with their training and will encourage others to enroll. Also employers are well satisfied with the performance of graduates of technical programs and will employ other graduates of technical agriculture programs.

The typical student in technical agriculture programs in Ohio was nineteen years of age when he enrolled. He had previous farm experience, having lived on a farm within fifty miles of the technical institute attended. His father is employed in farming or in another agricultural occupation. Enrollees were high school graduates and ranked, on the average, at the 47 percentile of his high school class. He achieved grades slightly above a C average in high school.

Students were encouraged to enroll in technical agriculture programs by their parents, vocational agriculture teachers, and technical school representatives. By enrolling and completing the program, the enrollee felt he could increase his earning capacity, obtain more desirable employment, and improve his opportunities for advancement.

These are some of the conclusions reached in a study of the post-secondary technical agriculture programs in Ohio which was completed in 1968.

### The Study

The purpose of the study was to identify the characteristics of students in four technical agriculture programs in Ohio and to determine the association between selected student characteristics and their success in the program and later employment. Programs of technical agriculture offered in Ohio are Agribusiness, Agricultural Mechanics, Food Processing, and Horticulture.

Data were collected on all 287 individuals who have enrolled in technical agriculture programs in Ohio since the programs were initiated in 1963. Included were 86 graduates and 71 dropouts in addition to those currently enrolled. Employers of graduates were also surveyed.

### Major Findings

—A student's high school grade point average in English, his overall high school grade point average, and his intelligence quotient were identified as the three best predictors of his ability to succeed in a technical agriculture program.

—Students with an agricultural background and experience achieved a slightly higher grade point average in their technical program than did students lacking this background and experience.

—One-half of the students commuted between their home and the technical institute. Three of every four students were employed while enrolled in the technical agriculture program. Neither commuting or employment adversely affected their grade point average in the technical agriculture program.

—The majority of the students in the agribusiness and agricultural mechanics programs had a variety of prior agricultural experiences. Fewer students in the food processing and horticulture programs had an agricultural background.

—Fifty-nine per cent of the graduates were employed in an occupation for which they were trained. Another 7 per cent were in other agricultural occupations, primarily farming; 7 per cent were in college, 18 per cent were in the military service, and 9 per cent were in non-agricultural occupations.

—The average starting salary of graduates was $390.00 per month. Their present salary, reported by their employers, was $484.90 per month after an average period of employment of thirteen months.

—Graduates who were rated Superior or Above Average by their employers had a higher grade point average in high school and in the technical program, had a higher intelligence quotient, and had more agricultural experiences than did graduates rated Average or Below Average by their employers.

—Supervised occupational experience was not an integral part of the technical agricultural programs at the time of the study. Nevertheless, 95 per cent of the students and 85 per cent of the graduates indicated that supervised occupational experience should become an integral part of the technical agriculture program.

—Seventy-four per cent of the students indicated that the technical agriculture programs should continue to be two years in length. One-fourth suggested longer programs.

—Ninety-four per cent of the students and 98 per cent of the graduates would recommend that interested friends enroll in the technical agriculture programs.

—The need for a student organization was expressed by 87 per cent of the students enrolled.

—Ninety-one per cent of the graduates indicated that they were satisfied with their present occupation.

—One of each four enrollees failed to complete the program. The major reason given for failing to complete the program was that the program was not offering what they wanted. However, two-thirds of the dropouts indicated the program had been of value to them.

—Ninety-eight per cent of the employers indicated that they would hire other graduates from technical agriculture programs. They were generally pleased with the preparation of the graduates, but would have liked the graduates to be stronger in the general traits of leadership, initiative, and judgment.

### Some Concerns

Technical agriculture programs must be expanded to provide more graduates to meet the employment needs in agricultural businesses and industries. It is estimated that present graduates only fill one-tenth of the annual demand for agricultural technicians in Ohio.

A second concern is that more technical agriculture programs be established and that these programs be strategically located to make technical education programs in agriculture readily available to more youth. A concerted effort must be made to inform teachers of vocational agriculture, youth and their parents, and others who influence young people to continue their education of the opportunities for persons who have equipped themselves with technical education in agriculture.



# News of NVATA

JAMES WALL
Executive Secretary

Have you ever thought of becoming a life member of NVATA? A life membership costs $75.00. With annual dues of $5.00 you would save money by buying a life membership if you teach for more than 15 years. In event dues are increased, and in that length of time no doubt they will be, you would have a saving in less than 15 years.

Mr. T. L. Faulkner, State Supervisor of Agricultural Education in Alabama, recently became the first paid life member of NVATA. The Alabama Vocational Agriculture Teachers' Association presented the membership to Mr. Faulkner who for many years has been a staunch supporter of the Alabama Association and the NVATA.

Other associations could well follow Alabama's lead and present life memberships to supervisors, teach educators, and others who have made outstanding contributions to their state organization and to the NVATA. State Association leaders should encourage their members to become life members of NVATA.

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Many state associations have been working with their teacher education institutions in informing trainees about professional organizations with the result that student membership in NVATA has increased from 15 in 1960 to 460 in 1967.

A brochure entitled "Student Membership Bulletin" is available from the NVATA office, Box 4498, Lincoln, Nebraska 68504. NVATA will also provide teacher education institutions with copies of the NVATA Creed and NVATA Bylaws. Trainees who become student members by paying the $1.00 membership fee receive a student membership card, the Firestone Cash Discount Card, and the NVATA Diary.

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Membership in NVATA reached an all-time high in 1967-1968 with a total of 10,190. Twenty associations were recognized for having 100 per cent membership and several others lacked but one or two members of being 100 per cent. Memberships reported for 1968-1969 are running ahead of those reported for the same time a year ago which would indicate that the record will be broken again.

# Stories in Pictures

Vocational agriculture students work in the land laboratory at the Regional Vocational Agriculture Center at Rockville High School, Connecticut. (Photo by The Hartford Courant)

Ralph J. Woodin (left), Professor of Agricultural Education at The Ohio State University and Program Chairman for the National Seminar on Agricultural Occupations Program Development in Area Vocational Schools held in September 1968, reviews the seminar program with the consultants for the seminar. (Left to right) Harold L. Noakes, New York; Clarence E. Bundy, Iowa; Charles Weaver, Ohio; P. G. Chastain, South Carolina; William L. Hull, Oklahoma; James Dougan, Ohio; R. D. Anderson, South Carolina; and C. M. Lawrence, Florida. (Photo by Ralph J. Woodin)

J. C. Hollingsworth (right), vocational agriculture teacher at Lancaster Area Vocational Center, Lancaster, South Carolina, conducts a tour of the Vocational Agriculture Department during dedication ceremonies for one of the first vocational centers constructed in South Carolina under the provisions of the Vocational Education Act of 1963. Mr. Hollingsworth used a model greenhouse exhibit to explain the various phases of propagating and growing ornamental plants. (Photo by Wilbur H. McCartha, South Carolina Department of Education)

AGRICULTURAL EDUCATION

# Agricultural Education

Volume 41 March, 1969 Number 9

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## STUDENT ORGANIZATIONS