IN-SERVICE AGRICULTURAL MECHANICS EDUCATION — Gary McKey, University of Minnesota, Crookston, is shown demonstrating a dynamometer to a group of teachers in a tractor service and maintenance workshop in Willmar, Minnesota. (Photo from Forrest Bear, University of Minnesota)

MARYLAND AG MECHANICS WINNERS — Elmer Cooper, biology advisor of the North Harford (Maryland) FFA Chapter, and Gary Henry (left), chairman of the Agricultural Engineering Dept. of the University of Maryland, are shown with members of the team in the Maryland Agricultural Mechanics Contest. The team won the North Harford FFA Chapter. (Photo from University of Maryland)

STORIES IN PICTURES

by Jasper S. Lee

SUMMER INTERNSHIP IN AGRICULTURAL AVIATION — A student from the University of Minnesota at Crookston is shown performing maintenance on an "Ag Wagon" as part of a 72-week internship in agricultural aviation. (Photo from Forrest Bear, University of Minnesota)

CONSTRUCTING A HYDRAULIC LIFT — Members of the agriculture mechanics class and Hewley (Minnesota) FFA Chapter are shown constructing a hydraulic lift as part of their agricultural aviation training. (Photo from Forrest Bear, University of Minnesota, John Hewey, Hewley, Minnesota)

Diesel Injector Testing — David Readl (left) and David Ford of the University of Minnesota Agriculture Safety and Maintenance classes are shown testing a diesel injector in the Laboratory of a Diesel Service and Maintenance class at the University of Minnesota. (Photo from Forrest Bear, University of Minnesota)

TWO-YEAR POST SECONDARY PROGRAMS IN AGRICULTURE

Volume 48 Number 7

January 1976
One-Year Post Secondary Programs in Agriculture

John H. Bartlett, Coordinator
Elevator and Farm Supply Management
Iowa Central Community College
Fort Dodge, Iowa

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GUEST EDITORIAL

TWO-YEAR POST SECONDARY PROGRAMS IN AGRICULTURE

By John H. Bartlett

The theme of this issue is the two-year post secondary programs in agriculture. This theme is particularly important as we look towards the national conference on vocational agriculture which is to be held in Iowa this summer. The conference will provide an opportunity for all those interested in agriculture education to come together and discuss the various aspects of the two-year programs.

There are several key points that need to be addressed in this issue. First, we need to focus on the importance of these programs in preparing students for the workforce. The two-year programs provide a solid foundation for students who are interested in pursuing careers in agriculture. Second, we need to emphasize the role of agriculture education in preparing students for a lifetime of learning. The two-year programs provide an opportunity for students to develop critical thinking skills and problem-solving abilities that will serve them well throughout their lives.

Finally, we need to consider the impact of these programs on the nation's economy. Agriculture is a vital industry in our country, and the two-year programs play a crucial role in ensuring that we have a skilled workforce to meet the demands of the industry. By focusing on these themes, we can help ensure that the two-year post secondary programs in agriculture are successful and continue to meet the needs of students and the industry.

The Elevator and Farm Supply Management program, and all other programs in agriculture, are important to the future of our country. Let's work together to ensure that these programs are as strong as they can be.

John H. Bartlett
Innovations at Florence-Darlington Technical College

The curriculum in Agriculture at Florence-Darlington Technical College involves a two-year study leading to the Associate of Science degree. The National Agricultural Education Board has approved the curriculum. Students interested in agriculture can pursue studies in related fields.

Activities included livestock judging, public speaking, and identification of insects, pests, weeds, and soil types. The selections were based on the following criteria:

1. The student can get a twelve-week period of work in which he can learn and work.
2. He has no fear of being fired.
3. He can look into an area of work and decide if this is an area of interest. If he determines that he is not suited for this type of work, he is not obligated to stay. The supervisor is also not obligated to hire him if he decides the student is not suited to the work.
4. This is an excellent way for students to enter the job market; employers like it, too.
5. This provides for good public relations and support from farmers and agricultural people.

In order to meet the instructional needs of both day and evening classes, we began to video-tape as an economy move so that small classes, day and evening, could be covered as one class.

RECRUITMENT

Enrollment has not been consistently high in many agricultural programs. In order to attract students to our program, a number of activities were carried out. The overall promotion of the program included radio and TV programs which featured Agriculture Leaders invited students, instructors, and graduates to participate in their programs. Also, speaking to Vocational Agriculture classes in the schools has been a regular part of recruitment. Instructors, graduates, and students have participated.

An Agromony Field Day was organized and carried out by the Agriculture Club. The Agriculture Department staff, students and Vocational Agriculture teachers and Extension Leaders worked together to plan and prepare for the special Field Day. High school students who were in the Y-Club or enrolled in the Vocational Agriculture programs were invited to participate in a day of activities on our campus.

Activities included livestock judging, public speaking, and identification of insects, pests, weeds, and soil types. A special I.D. card was awarded to winners in all categories. The Agronomy Field Day has become an annual event. A scholarship program was begun at the same time as the Agronomy Field Day. A number of agricultural businesses contributed to this scholarship fund:

The agronomy program took a new direction beginning in September. A considerable amount of literature had been generated to begin new classes. A decision was made to begin classes to the evening -- offering technical instruction and numbers of courses so that a person could receive the degree of Associate of Science degree in two years. The opportunity appeared to be a much-needed extension of the day program. The evening program was given a choice of ten students to one year.

In order to meet the instructional needs of day and evening classes, we began to video-tape our day classes and provide tapes for the evening classes. Two instructors were chargeable material from three sources: the beginning, the video-tape course, and the evening, the video-tape course.

In conclusion, the Agronomy program has not been worked out. A special I.D. card was awarded to winners in all categories. The Agronomy program has been the supervised work experience. The advantages we have discovered in the supervised work include:

1. The student can get a twelve-week period of work in which he can learn and work.
2. He has no fear of being fired.
3. He can look into an area of work and decide if this is an area of interest. If he determines that he is not suited for this type of work, he is not obligated to stay. The supervisor is also not obligated to hire him if he decides the student is not suited to the work.
4. This is an excellent way for students to enter the job market; employers like it, too.
5. This provides for good public relations and support from farmers and agricultural people.

Continued...
Agricultural Education in California Community Colleges is charged with a great deal of responsibility to the students beyond high school. More specialization and therefore greater depth of programs and courses are covered. Students have several choices that they should try and make regarding their undertakings. A single course, a certificate program or A.A. or A.S. degree are three of the choices a student may take in order to be trained to enter a particular job or agricultural business or industry. The student may also decide to take a program for transfer to a four-year college, or a combination of both.

There are many instances where the students enter with one goal and change to another. Approximately 80 percent of the students, statewide, transfer on to a four-year institution, and others concentrate on entering directly into the world of work. Regardless of which choice is made, students should work as closely with their advisor or counselor as they can.

Until 1960, California Community Colleges were known as Junior Colleges and were under the Board of Education, and the agriculture departments were subsequently under the Bureau of Agricultural Education. At that time the Board of Governors for the California Community Colleges was formed, and the Community Colleges became a separate entity responsible for the educational programs, processes and all business of running the college.

Including the teaching of the agriculture departments from the Bureau of Agricultural Education. They are now under the jurisdiction and work directly with the Specialist of Agricultural Education at the California Community Colleges Chancellor's Office.

The two groups, Community College and high school agriculture departments, still strive to work closely together through articulation of programs, activities, and professional organizations. The professional organization for agriculture instruction is the C.A.T.A., which has recognized recent changes to meet the needs of both groups as well as meeting the needs of the entire group.

The Community College agricultural programs are a very important part of the overall educational undertakings of the California Community Colleges. There are 43 of the 100 colleges that have agricultural programs with one or more full-time agricultural teachers employed. An additional 15 colleges have partial programs, but in most cases are planning to become fully established within the next few years. Overall, there are nearly 200 full-time credentialed occupational instruction and vocational agriculture instructors and close to 20,000 students at this time. Projects show that this number will increase each year for at least the next five years.

Agriculture teachers are still in demand in Community Colleges as they are in the high school programs. The largest majority of instructors hired into the community college agriculture departments come from high school agricultural teachers who have gained teaching experience and have demonstrated their abilities. This is a healthy situation for all involved in that the instructors have had a pool background as well as an understanding of the high school programs. Cooperation and articulation between the two groups is much greater and more stable than if an individual comes directly from industry.

From the students' viewpoint, California Community Colleges are providing, and will continue to do so, a choice to attend programs of their choice that will make them able to cope with the world of work and tomorrow. This will be done by providing access to programs that will help them be treated immediately as plowable or have the opportunity of transferring to a four-year institution. The facilities of the California Community Colleges agricultural departments are well trained, dedicated people and are readily available to help students achieve their educational goals.

Correction

A quotation in the first column of Richard Welton's article in the October 1975 issue should have read as follows:

A 1971 report on education in Brazil noted that teacher training has always been a particularly knotty problem. The report states that a large proportion of Brazilian teachers are 'non-qualified for their job.'
AG ED IN N.C. COMMUNITY COLLEGES

CONTINUED AG ED IN N.C. COMMUNITY COLLEGES

Coy L. Hudson
Dept. of Community Colleges
Raleigh, North Carolina

The agricultural industry in North Carolina and the nation needs individuals with a good understanding of agriculture who can exercise sound judgment and competently perform various activities as producing, selling, servicing, distributing, supervising, evaluating, operating, and testing agricultural products. The education of persons to enter these agricultural occupations is a primary objective of agricultural programs in North Carolina's system of community colleges and technical institutes. These programs are designed to provide a theoretical and practical understanding of the field of work so one can perform such activities as selling, servicing, and managing in farm, agricultural or natural resource occupations.

Areas where technical agricultural training personnel are needed are farms, supply and equipment firms, food and fertilizer plants, horticultural enterprises, poultry hatcheries, agricultural chemical firms, agricultural research installation, food processing plants, food wholesalers, forest services and industries, fish and wildlife management preserves, and livestock conservation districts, animal care farms, wood processing industries, and recreational services.

To meet the wide diversity of manpower needs in the agricultural industry, the members (constituents) of the North Carolina Community College System have developed various technical and vocational agricultural curriculum programs. In general, technical programs are two academic years in length and lead to the awarding of an Associate in Applied Science Degree. The graduate of a technical program usually works in close cooperation with and under the direct supervision of a professionally trained person, unless he is self-employed. Vocational programs are designed to train people for entrance into a skilled occupation. Vocational programs may range from one to seven quarters in length, depending upon the development of skills or job proficiency. Graduates of a four-quarter or longer program are awarded a diploma, and certificates are awarded for the successful completion of any program one to three quarters in length.

In the 1974-75 academic year, twenty-four different technical and vocational agricultural programs were offered in the Community College System, with approximately 3,400 students enrolled. These programs are listed in Table 1.

During the past five years, one of the most popular programs has been ornamental horticulture. During this time, the number of horticulture programs offered in the system has doubled, while numbers of students enrolled have almost tripled. Presently, we have eleven innovation of horticulture program programs. Program emphasis has changed during the past few years from ornamentals to landscape technology.

State Advisory Committee

A significant development that has occurred in the horticulture program since has been the involvement of a statewide horticulture advisory committee. Enacted in January of 1972, this committee is composed of landscape architects, nurserymen, landscape contractors, and faculty members from the horticulture departments of North Carolina State University. In addition, the purpose of the advisory committee is to provide information and guidance to the Community College System so that the Department of Community Colleges and member institutions may provide the most advantageous horticulture programs possible to meet the needs of both students and industry. These meetings are scheduled approximately four to six times per year and are held at the institutions that have a horticulture program or at the Farm or business of the industry representative on the committee.

Table 1. Technical and Vocational Agricultural Programs offered in North Carolina Community College System in the 1974-75 Academic Year

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of Programs</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Business Technology</td>
<td>2</td>
<td>200</td>
</tr>
<tr>
<td>Agricultural Chemicals Technology</td>
<td>1</td>
<td>150</td>
</tr>
<tr>
<td>Agricultural Management Technology</td>
<td>3</td>
<td>300</td>
</tr>
<tr>
<td>Agricultural Sciences</td>
<td>2</td>
<td>200</td>
</tr>
<tr>
<td>Agricultural Mechanization</td>
<td>1</td>
<td>150</td>
</tr>
<tr>
<td>Fish and Wildlife Management Technology</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Fisheries Research and Management Technology</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Food Processing Technology</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Forest Management Technology</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Forest Products</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Horticulture Business Technology</td>
<td>2</td>
<td>200</td>
</tr>
<tr>
<td>Orchard Management</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Ornamental Horticulture</td>
<td>2</td>
<td>200</td>
</tr>
<tr>
<td>Outdoor Recreation Resources</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Poultry and Livestock Technology</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Recreation Resources</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Rural Development</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Soil and Water Conservation Technology</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Veterinary Medical Technology</td>
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<td>50</td>
</tr>
<tr>
<td>Vocational Programs</td>
<td>1</td>
<td>50</td>
</tr>
</tbody>
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(Continued on next page)

CONTINUED

A CHANGING AG TECHNOLOGY PROGRAM . . .

continued

Coy L. Hudson
Dept. of Community Colleges
Raleigh, North Carolina

Curriculum requirements, materials selection and utilization, trends in the horticulture industry, facility and equipment needs for horticulture programs, student enrollment trends, trained manpower needs of the horticulture industry, departmental chairs or organizations for horticultural students, and articulation between secondary, community college, and four-year college or university programs in horticulture.

Veterans' Training

The Agricultural Science and Mechanization curriculum or the Veterans Cooperative Farm Program is another rapidly expanding program. This program is designed primarily for veterans who are engaged in farming. The Department of Community Colleges and the Department of Public Instruction cooperatively administer the program. Twenty-four county community college and technical institutes are offering this program which is designed to meet the needs of the agricultural producers in the areas the institutions are located. These programs are usually scheduled in the evening or late afternoon to accommodate the full-time farmer so he can continue his farm work and also attend school.

The objectives of the Agricultural Science and Mechanization Program are as follows:

1. To train veterans to manage and operate a farm.
2. To develop the technical skills and scientific knowledge necessary to increase efficiency in the farming operation.
3. To aid the veteran to further develop an awareness of his responsibility as a citizen in the community.

In order for a veteran to be eligible to receive educational benefits by enrolling in the program, he must be engaged in production agriculture which is relevant to the course of instruction offered by the institution. He must also be enrolled in classes a minimum of ten (10) hours per week, forty-four weeks per year to receive full-time benefits. The length of the program is thirty-six months.

Additional educational programs in agricultural education offer possible inclusion in the North Carolina Community College System to meet the needs of those who wish to pursue a technical career in the field of agriculture. Through a planned program of working and cooperating with leaders in all phases of the agricultural industry, the Community College System will be in a position to provide meaningful and relevant agricultural education to all those who wish to work in the fifty industries which the institutions who desire instruction in agriculture.

A CHANGING AG TECHNOLOGY PROGRAM . . .

CONTINUED
Specialized Individual Approach to Job Preparation

Melvin Brookhuis and Bob Runn Farm Management Instructors, Area One Voc-Tec School
Calmar, Iowa

Some students have made arrangements to become a partner in their home farm prior to enrolling. They are required to take a farm record keeping specialty.

Here at Northeast Iowa Vocational-Technical School we have instituted a specialized three-phase approach to job preparedness for students enrolled in our Farm Management Program.

I. Career Planning
The heart of this program is the educational plan which each student develops. Time is allotted each week for the student to do such things as: (a) Identify competencies (knowledge and skills) essential to accomplishments of career goals after graduation; (b) work to develop a sequence of regular courses, specialty courses, and co-operative experiences which when properly combined will result in greater attainment of job preparedness goals; and (c) development of specific work plans to guide accomplishment of learning activities when the student goes out on his own.

II. Farm Enterprise Specialty Courses
Our students enroll in what we call specialty options such as Swine, Dairy, Beef and Crop. A unique plan: individualized study in our new Learning Resource Building, and the school farm provide opportunities for learning essential knowledge and skills pertinent to the specialty courses.

Supervised Occupational Experiences
Supervised Occupational Experience has the following objectives: (1) To help the student learn through real experience, (2) To permit the student to work with equipment which is not available at Area One, (3) To permit the student to work in an actual situation which cannot be duplicated at the school, (4) To help the student apply and see the application of his or her classroom experiences, (5) To permit the student an opportunity to develop a sense of responsibility as required in the world of work, (6) To permit the student to gain experiences more closely related to the needs of the industry. Many of the required skills can best be learned on well-managed farms where profitability is the basis for management programs and decision making. Only farms of this type can serve as supervised occupational experience training sites. Another essential requirement of the training site is the ability and willingness of the site manager to provide the experiences desired by the individual student as indicated in his or her work plan for the six week supervised occupational experience period.

During the first week of the supervised occupational experience, the list student and the training station manager sit down and go over the work plan, picking out specific jobs which can be achieved during the balance of the six weeks. A visit is made about two weeks later to check progress and deal with any problems that may arise. Another visit is made during the final week to evaluate the cooperation work experience.

Upon the students return to campus (on the co-op training (a) a summary of accomplishment is written up by the student, (b) a performance report is received from the training station manager and (c) an achievement evaluation of the work experience is completed by the instructor.

A new level of student proficiency in regards to job preparedness is then de-

termined. This proficiency level is one of the basic criteria for development of learning activities for the second and third experience period (spring quarter of year). This procedure is also used prior to the two supervised occupational experiences available in fall and spring quarters of the second year of the Farm Management program.

Home Farm Work Experience
Some students have made arrangements to become a partner in their home farm operation prior to enrolling at Area One. Therefore, they have some individual needs which are especially special such as (1) they must have a part of the labor supply while in school, (2) the home operation has been to be expanded during the time they are attending school so that meaningful employment opportunity is available at graduation time and (3) some of their learning experiences must be completed by the time which the home farm is operated.

Students who go to their home for a part time occasional job must have the training and a part of their work be spent on campus.

In this program, the student will take over the record keeping duties for the winter quarter of his first year and closeout them out during the winter quarter of his second year. At completion of the record, an analysis of the records will be done.

The Farm Management program at Northeast Iowa Vocational-Technical School (Area One) is designed to meet the individual student's need for the initial development, periodic evaluation, and timely expansion of an educational plan for each individual student. It is the key to program success to a personalized educational plan which better incorporates regular class work, specialty courses and supervised occupational experiences provides each student opportunity for greatest involvement of job preparedness.

Lawrence H. Byfelding, Jr. Teacher Education The Ohio State University

Table 1. 1974 to 1975 Changes in Two-Year Post Secondary Education

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<tr>
<td>1973-74</td>
<td>453</td>
<td>441</td>
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Status of Post Secondary Programs in Agriculture

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The cooperation of agriculturally re-
tested businesses is the primary reg-
ent of a successful two-year program in agriculture at the post secondary level. At least, this cooperation is what we at Joliet Junior College attribute the success of our program to.
In 1961, J. R. Hill, Illinois' Director of Vocational Agriculture, said, "If any junior college in Illinois will offer a two-year program on how to farm, I will see to it that they get 100 percent of the expenses paid." I was never sure that the Mr. Hill would keep his pledge, but I was inspired, and would have, if time permitted, begun the first such program in the state in 1962 rather than 1964.
During the early 60's Joliet Junior College had only a list of courses in the state which offered transfer credit. But the need for a practical, two-year program was becoming more and more apparent. The first step was to determine what such a program should contain. A survey was made of area farmers and businesses connected with farming. Briefly, the results of the survey showed that there was a definite need for such a program, and that the curriculum would be an agricultural supply program.
With the help of Dr. Lloyd Phillips of the University of Illinois Agricul-
tural Education Department and six of his students who were working on advanced degrees, a survey was conducted to determine job opportunities in the area of agricultural education and to identify the areas, or clusters, of the most jobs. This survey indicated that, without a doubt, the providing of farmers with supplies and how to properly use them, was the area the college was entering on. In developing our over-all curri-
culum, we leaned heavily on the ag educa-
tion staff at the U. of I. The curricu-
lum, as it was presented to the Illinois Agricultural Association in Bloomington, Illinois, was exceptionally well received. In fact, the statement was that they could use now all the people we could graduate in 10 years.
In May of 1966, our program was approved. We publicized it with articles in more than 100 daily newspapers, about 50 radio stations, on 5 television programs, in numerous magazine articles and through a tremendous amount of personal correspondence. In August we had 48 students enrolled.
We started with typical farm boys in-
terested in agriculture and farming, but with no opportunity to farm.
I do not want to give the impression that we were teaching agriculture at Joliet Junior College. We had operated a regular transfer pro-
gram since 1954, and had taught agri-
culture at Joliet Township High School for many years prior to that time. Our Farmers Short Course, which attracts, each spring, more experienced farmers and recent college graduates than any program of its kind in the nation, celebrated its 27th anniversary this year. (More than 400 area farmers attended the Farmers Short Course in 1973. Our participants now include many father-son teams.)
During the early days, there were many problems to be overcome, but all those involved with the project were enthusiastic and cooperative and this made the job much easier than might have been expected.
The instructors hired for the first year were very experienced in the field of vocational agriculture. We were fortunate in being able to hire experienced men who had been taught anywhere before, and who were familiar with course would have to be developed for all of our programs to succeed.
In 1964, we had 15 required courses. It is important to know the students familiar with our ag teachers and taught by them.
Of the 15 required courses, 15 were taught in the agriculture department, with the remainder in business and in the speech department.
Since the beginning of the two-year associate degree program barely more than ten years ago, our agriculture program has expanded until it now comprises both an agriculture option and an agriculture and management option in the regular agriculture program curriculum; plus two-year associate degree programs with options in livestock, turf care, farm management, nursery operations, and floriculture. We have also added several certificate programs for those interested in specific fields. The Certificate in Ornamental Horticulture is very popular.
At the time the two-year program was designed it was to be limited to students who were seeking a two-year degree in agriculture. The Certificate in Ornamental Horticulture is very popular. The Certificate in Ornamental Horticulture is very popular.
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POST SECONDARY STUDENT TEACHING

Daniel W. Brown
Agricultural Educator
Ellsworth Community College
Iowa Falls, Iowa

Post secondary student teaching opportunities should be provided for students in colleges and universities who wish to prepare for teaching at the post secondary level. The responsibilities of post secondary educators vary from those of secondary vocational education instructors in several important ways. One of the key characteristics of student-teacher relationships, departmental functions, occupational placement, recruiting, and multiple men teaching situations are a few.

Why Post Secondary Student Teaching?

While enrolled at Iowa State University as a graduate student, I decided that I wanted to enter the agriculture teaching profession, but not at the secondary level. I let my desire to be known to my advisor, Mr. Clarence E. Bundy, and our Agricultural Education Department Head, Dr. Maurice R. Crawford. They cooperated in designing a unique program to meet my needs. I became a pilot student being prepared for post secondary teaching in a teacher education program which traditionally had produced secondary school instructors. My courses were modified to allow me to release information to the post secondary level while my classmates completed projects related to secondary programs. Also, I worked on independent projects among those about post secondary institutions, their programs, and their students. When the time for student teaching approached, I went to Hawkeye Institute of Technology, a community college, at Waterloo, Iowa, and worked under Virgil Christiansen, head of the Agriculture and Natural Resources Department.

Class Characteristics

The student population at the post secondary level varies greatly from that of the secondary level both for work in and out of the classroom. While a bus engineer at the post secondary level teaches a particular lesson or unit, he must consider that there is little likelihood that the material will be reinforced or repeated in subsequent years. The secondary vocational agricultural teacher usually has several opportunities to convey similar material to a particular group of students. At the secondary level, multiple men departments and teaching specialization are important except in the rule in Iowa whereas, at the post secondary level the reverse may be true. Teaching solely in the animal science area, agronomy, power mechanics, or agriculture, for example, allows one to develop expertise in that specific area.

In a multiple-instructor post secondary situation, good communication among the instructors is essential. Instructional design was major in focusing related teaching topics must coordinate their presentations to avoid gaps or overlaps of information. An example would be a curriculum where agricultural law is not presented as a course, but is worked into the other courses applicable to all of the students.

Many post secondary institutions which provide agriculture also have a campus farm. In this case in my post secondary student teaching situation, I worked with the students in livestock management at the campus facility, both through individual and group assignments and in class projects and demonstrations. My student teaching experience at the campus farm provided me with the opportunity to use various testing methods for determining the scientific aspects of agriculture can be an extension of the classroom.

Occupational Placement

Occupational placement at the post secondary level may be optional; however, at the post secondary level, it is an integral part of every student’s educational experiences. Many students are geared toward activities in which he or she will participate during his or her placement.

While at Hawkeye, I had the opportunity to select high school student in training teaching. I experienced locating suitable training sites and coordinating the students who were placed there for their occupational experience. Final placement is on the instructor’s concern as many post secondary agricultural departments perform that function. A rapport will develop with the school which is suited for them and which offer an opportunity for job satisfaction and future advancement.

Recruiting

Successful recruiting of new students at the post secondary level is imperative for program survival. Student recruiting at a post secondary institution allows one to become familiar with techniques and procedures for doing this. This has to be scheduled in the institution’s duties to provide for recruiting activities in developing methods, determining goals, and designing presentations. Post secondary recruiting is a multi-faceted task than is recruiting at secondary schools.

Departmental Functions

Since post secondary agricultural programs usually have multiple departments, it is vital that there be good coordination among all departments. (Continued on next page)

Bennie L. Byrke
Agricultural Education
Iowa State University

Educational Plans of Iowa Yo-Ag Students

Bennie L. Byrke
Agricultural Education
Iowa State University

High school students of today are faced with a tremendous challenge in preparing themselves academically and vocationally for their life work. Many opportunities exist for them to continue their formal education beyond high school. Vocational agriculture students have been greatly affected by the increased educational opportunities available to them. This has been due primarily to an accelerated growth and expansion of agricultural programs in post secondary institutions. The agricultural programs in Iowa post secondary vocational schools have grown considerably with enrollments increasing from approximately 60 in 1965 to over 2400 students in the 1974-75 school year.

The task of assessing young people in establishing and retaining the educational and occupational goals becomes increasingly difficult because of factors which affect their educational plans. These include: varied opportunities for post secondary training, influence of peers, parental influence and attitudes of society which have an influence upon the amount and type of formal education youth may select.

The Department of Agricultural Education at Iowa State University recently completed a study to evaluate the institutional plans of Iowa vocational agriculture students to determine factors which may be related to the educational plans of these students.

Procedure

The study included a random sample of thirty Iowa high school seniors which provided vocational education plans in the 1974-75 school year. A total of 623 junior and senior vocational agriculture students participated in the study. In completing the instruments and questionnaires, each student was expected to state his/her educational plans upon graduation from high school. Based upon the students’ educational plans, the following groups of students were identified and studied: students planning to attend a post secondary vocational school, students planning to attend a four-year college or university and students planning to enter the world of work upon graduation from high school.

A total of 42 items related to educational and occupational decision-making were studied to determine differences which may exist among the above groups of students. The instruments and questionnaires used in collecting the data for this study are as follows:

1. Personal, Family, and Community Data Related Educational and Occupational Plans of Iowa Vocational Agriculture Students.

2. Agricultural Achievement Test by Peterson, et al.

Selected Findings and Recommendations

The findings of this study reveal that there are differences in selected factors related to educational and occupational decision-making among vocational agriculture students grouped according to their stated educational plans upon graduation from high school. The following are recommendations, preceded by three selected findings upon which the recommendations were based. These findings and recommendations should be of interest to high school vocational agriculture instructors, vocational guidance counselors, post secondary area vocational school personnel, and others who are in a position to assist vocational agriculture students in establishing and retaining their educational and occupational goals. These statements and recommendations should have direct implications for these individuals involved in the development of secondary and post secondary agriculture programs.

Over 55 percent of the students participating in this study indicated that they planned to get a job upon graduation from high school and not attend college.

A. Developing agricultural job entry level skills should be a priority in the secondary vocational agriculture curriculum.

B. Instructional programs in vocational agriculture should be structured in such a manner as to ensure that students will attain the necessary knowledge and skills needed for immediate entry into occupations, as well as providing the option to pursue additional formal education if they so desire.

(Concluded on next page)
Junior College
Farm Equipment Mechanics

Kend Easing
Instructor - Coordination
Northeastern Junior College
Sterling, Colorado

Like any new program, it took some time to prove to the dealers that we could train personnel for their businesses.

Several of the new students even have jobs picked out before they enrol.

Unlike the junior college, the new one also has an office, a bookers-room combination, tool room, large classroom, and storage room for audiovisual equipment, teaching materials, etc.

The curriculum is designed to train students for every phase of an implement dealership in service, sales, and parts.

A very important part of the student's training is actual experience. We don't have any problem getting equipment to work on as many of the students bring in tractors and equipment from their family farms. We also take care of the tractors and mowers for the college's maintenance department.

Like any new program, it took some time to prove to the dealers that we could train personnel for their businesses. Now the dealers in Sterling are very willing to help give our students further practical experience. They hire our second-year students as part-time employees after class hours.

The recruitment of new students hasn't been a problem. Many new students enroll because of a past or present student. Our state high school vocational agriculture teachers also do a good job in advising students interested in agriculture programs about our program. Nearly all of our 50 enrolled students have been in high school vocational agriculture classes.

We've never had any trouble placing students after graduation either, as we have dealers asking for more men than we can train. A number of our students even have jobs picked out before they enroll. Some of our graduates have returned to their home farms, and others are working as mechanics, partners, and salesmen in dealerships.

The secondary program was organized last year to include three graduates of the program. Two are working in sales, one as a salesman and the other as a mechanic. The third is farming. The rest of the committee is made up of others, and they are doing well. The committee included a farm manager, the mechanics, and one each of dealers as well as others.

We are continuing our efforts to increase the program and to have more students in the program. We are also working to increase the number of students in the program.

G. Administrators should maintain a keen sense of awareness of the importance of the vocational agriculture program in their high school curricula. There is an expanding demand for people who possess the knowledge and skills needed for the fast array of jobs available in agriculture today.

H. Assistance in employment placement should be provided and planned follow-up activities designed to ensure that graduates are prepared for the work world.

Approximately 37 percent of the students participating in this study planned to attend a post-secondary area vocational school upon graduation.

A. Greater emphasis should be placed on articulation between secondary and post-secondary educational programs.

B. Continuous communication between high school and post-secondary educational programs personnel should be maintained.

C. High school students should be provided with current information about post-secondary educational programs.

In conclusion, the continued improvement in vocational agriculture programs and the increasing demand for better trained technicians have led to the growth of the secondary program. Further growth in this phase of the program can be expected as the needs of the agricultural industry continue to increase.

Summary
In recent years there has been a rapidly accelerating growth of agricultural programs in postsecondary vocational schools. This increased program expansion has brought about a need to determine the educational goals and objectives for junior and senior vocational agriculture students and factors which may be related to their educational plans upon graduation from school.

A knowledge of the tentative educational plans for a junior and senior vocational student and an assessment of the factors related to those educational plans should provide a basis for developing programs, materials and curricula offering to assist youth in attaining their educational goals.

Instructors of agriculture, administrators, vocational guidance counselors and other teachers must have a keen sense of awareness of the importance of their academic and vocational skills. Assisting these youth in making meaningful and realistic decisions regarding their future educational plans should continue to be a vital concern to educators.

(Concluded on page 166)
Agriculture's Future: Production Technology

Keith L. Byers
Production Agriculture Dept.,
University of Nebraska
Technical School of Agriculture
Curtis, Nebraska

Throughout the United States, numerous two-year post secondary programs in agriculture have been established with the objective of training young men and women to become better agriculturists in this world where food and fiber are becoming important bargaining tools. As we look into the complexity of the field of agriculture, we see that the heart of agriculture is the individual farmer or rancher who is producing the food and fiber for his family, city, state, nation, and world. Each year the world requires more food and fiber, and the farmers and ranchers are expected to produce it on the same acreage of land or less than the year before. How can they continue to carry on this task? Efficiency! How can they become more efficient? They can do it by studying the technology involved in producing the food and fiber, by studying the latest research carried out by land-grant universities, by studying the complexity of the marketing system, by becoming more efficient in their mechanical skills, and by studying record keeping systems.

The Production Agriculture Technology program, one of six programs at the University of Nebraska School of Technical Agriculture (UNSTA) in Curtis, Nebraska, instructs students in the above technologies. The 21-month Production Agriculture program is for young people interested in pursuing farming and/or ranching careers. Students enrolled at UNSTA have a curriculum centered around livestock technology, plant & soil technology, agricultural business management technology, and machinery mechanics technology. Applied social and natural sciences are included in the curriculum to prepare students for roles in community leadership.

To enhance the curriculum offered at UNSTA, the student spends 50 percent of their time performing practical applications of the theory. In numerous courses at UNSTA, the students apply the principles of animal science, cropping systems, and plant sciences to practical situations. They get real world experience that will be helpful in their future careers.

In summary, the Production Agriculture Technology program at UNSTA is designed to provide students with the skills and knowledge necessary to be successful in the fields of agriculture and related industries. The program is a comprehensive approach to education that prepares students for leadership roles in the agricultural community.

Leadership takes many forms and is seen on many levels. The professional career of Gordon I. Swanson is one of leadership ranging from the local community to the state, regional, and international areas. If a person can be described as one who has the ability to influence the thoughts, actions, and decisions of others then Swanson is a leader.

In common with many of his colleagues, Swanson has shown a farm upbringing as a rural background that has had its character and shaped his professional life. Gordon Swanson graduated from the University of Minnesota in 1941 to enter the U.S. Marine Corps. Swanson ended his military career as a colonel in the U.S. Air Force. After returning to the University of Minnesota, Swanson received a Ph.D. in agricultural economics.

Swanson has served as a consultant on international development projects for the World Bank, Ford Foundation, OECD (Higher Education Planning for Agriculture), and several other agencies and foundations. He has worked in countries around the world, always to improve the quality of education and to promote agricultural education. Swanson received a lifetime achievement award as an outstanding leader in agricultural education.
Opportunity for Professional Involvement by Post Secondary Teachers

Sam Stenzel  
Assistant to the NVATA  
Executive Secretary  
Lincoln, Nebraska

TABLE 1: Vocational Agriculture Programs in each Post Secondary Institution and the Number of Schools Offering Vocational Agriculture Programs

<table>
<thead>
<tr>
<th>Vocational Programs</th>
<th>Institutions Offering Vocational Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>86</td>
</tr>
<tr>
<td>2</td>
<td>152</td>
</tr>
<tr>
<td>3</td>
<td>44</td>
</tr>
<tr>
<td>4</td>
<td>86</td>
</tr>
<tr>
<td>5</td>
<td>88</td>
</tr>
<tr>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>More than 10</td>
<td>21</td>
</tr>
</tbody>
</table>

TABLE 2: Number of Full-time and Part-time Teachers Employed to Teach Vocational Agriculture in Post Secondary Institutions

<table>
<thead>
<tr>
<th>Position</th>
<th>One Teacher</th>
<th>Two Teachers</th>
<th>Three Teachers</th>
<th>Four or More Teachers</th>
<th>Total Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>122</td>
<td>122</td>
<td>42</td>
<td>136</td>
<td>212</td>
</tr>
<tr>
<td>Part-time</td>
<td>66</td>
<td>66</td>
<td>54</td>
<td>102</td>
<td>228</td>
</tr>
<tr>
<td>Summary</td>
<td>188</td>
<td>188</td>
<td>96</td>
<td>238</td>
<td>420</td>
</tr>
</tbody>
</table>

The growth in number of post secondary institutions offering vocational agriculture programs into their curricula was phenomenal. The 1975 Directory of Post Secondary Education in Agriculture, Natural Resources and Environmental Occupations listed 209 post secondary institutions with vocational agriculture programs. They offered 1,354 programs in 48 states and territories of the United States. Total enrollment exceeded 54,125.

The institutions varied in number of programs offered. Table 1 gives a breakdown of the number of vocational agricultural programs offered in the post secondary institution.

Table 2 shows that post secondary institutions employed 2,690 persons to teach the vocational agriculture programs.

Approximately 62 percent of the instructors were part-time teachers. The major source of teachers came from vocational agriculture programs and personnel from the agricultural business and industries.

PROFESSIONAL LEADERSHIP STRUCTURE

Although the type of programs varied within states and programs differed substantially throughout the United States, teachers of vocational agriculture had several commonalities. Those included an interest in vocational education, conducting creditable programs, training students to be proficient and productive, and maintaining favorable relationships with fellow employees and associates.

Members benefited from the experience and work of colleagues at local, state, and national levels. The American Vocational Association (AVA) and the "umbrella" for all vocational educators. Vocational educators for agriculture comprised the AVA Agriculture Education Division. The Agricultural Division affiliates were the American Association of Teacher Educators in Agriculture (AATEA), National Association of Supervisors for Agricultural Education (NASAE), and the National Vocational Agriculture Teachers' Association (NVATA). Each had representation on the Agriculture, Equity Policy Committee. The division president and vice-president for educational affairs served on the AVA Board of Directors.

GRASSROOTS REPRESENTATION

When organized in 1948, the major concern of the all classroom teachers, especially those at the grassroots level. As such, post secondary agriculture programs had a natural affiliation to the state supervisors and their teachers. That affiliation was to become more valuable and permitted closer program correlation between the three AVA Agriculture Education Divisions.

Since the passage of the Vocational Education Acts in 1963 and amendments in 1968, NVATA professional service and leadership was specifically designed for teachers in secondary schools. Since 1968 the NVATA has endeavored to become the professional organization representing the classroom teacher, the agricultural teacher, and post secondary institutions. State associations were encouraged to provide for active post secondary teachers' participation in state activities. Several states complied and provided for post secondary teacher representation.

Three general plans evolved and were implemented. The most common plan provided for post secondary representation in the state association, or local unit within the state association. Active members provided the same rights and privileges as those within the state association. Membership privileges were identical to those of the vocational educators. A third plan provided for a separate post secondary teachers' association within the state association and elected representation on the state association executive committee.

W. R. Hartmann, representing the NVATA, stressed a need for total involvement when he spoke at the national convention in New Orleans, He said:

"Opportunities for involvement and participation of all post secondary school teachers need to continue to expand at the state and national level as an integral part of their total involvement. It is imperative that we recognize the actions that will promote involvement. It is even more imperative to involve all post secondary school teachers in activities that will provide them with the knowledge and skill necessary to contribute to the profession as it moves into the 1970s."

GUIDELINES FOR INVOLVEMENT

A policy resolution was adopted by the delegates attending the national NVATA convention in 1974. It read, in part:

"THITHERBE IT RESOLVED that the NVATA and state associations take an active part in formulating vocational agriculture teachers in post secondary institutions and involve them in state and national vocational agriculture teachers association activities."

The NVATA developed and adopted guidelines to aid state associations implement the resolution. Those guidelines included several procedural recommendations and were approved at leadership conferences.

SUMMARY AND CONCLUSION

The entire realm of vocational agriculture instruction has changed since 1948. Legislation and provisions of the G-I Bill, coupled with the introduction of vocational agriculture programs, expanded programs, were developed for agriculture, natural resources, and environmental occupations, enrollments increased, and the supply of qualified teachers diminished.

Professional organizations assumed a new role and additional responsibilities as the administration organized and reorganized the U.S. Office of Education. With each reorganization, staffing for agricultural education decreased. Appointments remained vacant after key personnel retired. The parasea also carried into state echelons of leadership. Personnel on the state agricultural education staff became harrassed and restricted in their activities, leadership participation on state and local levels.

The NVATA revitalized its professional leaders. Recognizing enormous need for all programs leading local programs, publicizing agriculture education activities, and maintaining favorable relations with those with whom they worked. It encouraged pride in the profession and called for real commitment as a teacher. It stressed the need to maintain strength in every vocational agriculture school. Over 50 percent of the secondary teachers responded and became members of their state and national vocational agriculture teachers association. Such a goal also realist for post secondary teachers.

(Concluded on next page)
From the Book Review: Editor's Day... 

BOOKS TO BE REVIEWED

APPLIED ECONOMICS: Resource Allocation in Rural America; By Robert C. Brown and Daniel M. Blythe, Iowa State University (1975)

CORN QUALITY IN WORLD MARKETS; Edited by Lowell D. Hill, The Interstate Printers & Publishers, Inc. (1975)


FUNDAMENTALS OF HORTICULTURE; By Howard Andrews, Halfacre, McGraw-Hill Book Company (1975)

HIGH QUALITY PROTEIN MAIZE; Pooreeds compiled and edited by Purdue University (CIMMYT), Dowser, Hutchinson & Ross, Inc. (1975)

INSECT BIOCHEMISTRY AND FUNCTION; Edited by D. J. Candy and R. A. Kilby, Halsted Press (1975)


PHYSICAL EDATHOLOGY; By Sterling A. Taylor, W. H. Freeman and Company (1975)

PRINCIPLES OF APPLIED CLIMATOLOGY; By Keith Smith, Halsted Press (1975)

PROTEIN AND NUTRITION POLICY IN LOW-INCOME COUNTRIES; By Francis Ayad and Magars Jul, Halsted Press (1975)

RANGELAND MANAGEMENT; By Harold F. Headly, McGraw-Hill Book Company (1975)

THE SELECTIVITY OF DRUGS; By Adrien Albert, Halsted Press (1975)

VOCATION AS THE CORE OF AMERICAN SOCIAL PHILOSOPHY; By Harold H. Pauley, The Interstate Printers and Publishers, Inc. (1975)

WESFERN FERTILIZER HAND- BOOK; By Soil Improvement Committee California Fertilizer Association, The Interstate Printers and Publishers, Inc. (1975)


This book tells the non-farmer what farming would be like to someone who has never farmed or thought about farming or being a landowner. The content is also directed towards the consumer, who will have greater responsibility for the future of agriculture, particularly in the areas of conservation, pollution and pesticide management. The content is easily understandable and can serve as a basic text for future generations.

The book is a valuable resource for those interested in the future of agriculture and the role of consumer responsibility in agricultural policy. It is recommended for all who are concerned about the future of the world and our planet and its resources.

Written by Robert C. Brown, professor of agriculture at the University of Iowa. Midwest Farm Planning Manual Focuses on Crop Management. The revised third edition of Midwest Farm Planning Manual will be of special interest to farm managers, research students, farm managers, college farm management instructors and agricultural economists. It provides a valuable resource for students and instructors in crop management and other agricultural sciences.

The revised third edition of Midwest Farm Planning Manual will be of special interest to farm managers, research students, farm managers, college farm management instructors and agricultural economists. It provides a valuable resource for students and instructors in crop management and other agricultural sciences.

Punished to fit a standard-three-year curric-ulum, he is in the middle of adding personal information, it is available from booksellers. 

DATES AND EVENTS

10th International Conference on Vocational Education and Teaching in Agriculture

Introductory Seminar: July 29-August 9, 1976
Main Seminar: August 10-17, 1976
For more information write: The Secretariat of the CIA, Division of Agriculture CH-3903 Bern, Switzerland

Vocational Education Week
February 8-14

Southern Agricultural Education Conference
December 6-8, 1976
Bueno Vista Hotel, Blush, Miss. April 5-6

Research Conference in Agricultural Education
Louisiana State University
July 27-29, 1976
STORIES IN PICTURES

by Jasper S. Lee

EMPLOYMENT EXPERIENCE — John Hasen, agriculture student at Muscatine (Iowa) Community College, is shown operating an automated feed mill as part of his employment experience. Students in the program work 40 hours a week and participate in employment experience for 36 weeks. (Photo from Gerald Lomen, Iowa Department of Public Instruction)

Supervised Practice at Two-Year Colleges

INSTRUCTION IN GRAIN GRADING — Walter Mitchell, instructor at Muscatine (Iowa) Community College, shows instructor students in grading of grain and the use of grain grading equipment. (Photo from Gerald Lomen, Iowa Department of Public Instruction)

AGRICULTURAL EDUCATION

Volume 48 Number 8
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