NEWS TO ME

The number of workers in the prime 25-34 year old group will increase dramatically in the 70's. They will be better educated than workers of the same age group in the 60's. In 1965, 41% of the civilian labor force age 25-34 had 4 years of high school compared to 46% by 1970. Only 28% of the 1965 labor force had some college education compared to 31% in the 70's. Thus, there is a combined education total of about 10% growth in the 70's. Along with more education, these people will generally bring to the workplace higher occupational aspirations and expectations, more innovative and creative interests, higher mobility and an eagerness for greater participation in decision-making at the workplace.

U.S. Manpower in the 1970's
U.S. Dept. of Labor

U.S. exported a near-record $8.66 billion worth of farm products to foreign countries in 1970. This represents a fifth of world agricultural exports, with U.S. farm exports, a rise of 16 percent from 1969.

Of the world's largest single exporter of agricultural products, accounting for $600 million — nearly a tenth of the total. This state is first in soybeans, feed grains, potatoes, meat, and soybean oil as well as an important supplier of wheat, barley, sauerkraut, and hides and skins. Texas exports accounted for 2% of U.S. agricultural exports. They were: Illinois ($650 million), Iowa ($555 million), Texas ($412 million), North Carolina ($406 million), Kansas ($304 million), Arkansas ($269 million), Minnesota ($267 million) and Nebraska ($270 million).

For seven major agricultural products—wheat, rice, soybeans, tobacco, cotton, cattle hides, and cotton—our exports equalled one-third to two-thirds of the year's production. Production from about 1 of every 3 harvested acres goes abroad, and the U.S. farmer gets about two-thirds of his income from these exports.

—The Farm Index
December 1970

The rate of productivity growth dropped in the late 1960's. Increasing productivity will reduce inflationary forces, increase our output of goods and services, raise purchasing power, and help raise living standards. The productivity of the U.S. worker is still the highest in the world. But the growth in U.S. productivity has generally been below competing nations such as Canada, France, Germany, Italy, Japan, Netherlands, Sweden and the United Kingdom.

The Department of Health, Education, and Welfare has recently proposed a memorandum on vocational education. Six basic questions were posed in the request:

1. What are the strengths and weaknesses of current vocational education programs? To what extent do the weaknesses reflect administrators' shortcomings rather than unsatisfactory legislation?

2. What is the proper relationship between vocational education and other federal programs, particularly in manpower and higher education?

3. How can federal vocational education programs best reflect the administration's interest in (a) the income strategy, (b) the New Federalism, and (c) the blue collar worker?

4. To what extent could substantial improvement in vocational education be made within current levels of expenditure?

5. How can federal vocational education programs best serve as a catalyst for reform in the often bifurcated state vocational educational agency without violating the principles of the New Federalism?

6. How can the longstanding conflict that exists between HEW and the Department of Labor in this field be eased, and administration of federal vocational education programs be correspondingly simplified?
The Articulation of Agriculture Into the Total School Program

Guest Editorial

The Articulation of Agriculture into the Total School Program

Dr. Calvin Deffie, Executive Director, National Advisory Council on Vocational Education, Washington, D.C.

Vocational agriculture has long been one of the key areas in vocational education. Today many outstanding people have been involved in making vocational agriculture one of the most organized and intelligently directed fields in vocational education. Despite its success, vocational agriculture has suffered an image problem in recent years as industrial skills have become more visible to society than production agriculture. There has been much communication and discussion of this problem among people involved in vocational agriculture. Unfortunately, the discussions and the result of this discussion, "diffusing agriculture," i.e., its use of natural resources does not come from agriculture teachers talking to farmers and farmers talking to businessmen involved in agricultural fields, and agricultural businessmen and agriculture teachers discussing from familiar stations. This discussion and communication has been profitable in making the people directly involved in agriculture recognize the new problems and demands, but it has not solved the problems or met the demands because it has not extended to people in other fields. The theme of vocational education this month, "The Articulation of Agriculture into the Total School Program" is closely related to the image problem to which I refer. It presents an opportunity and a challenge to vocational agriculture educators to go beyond the traditional boundaries of their programs and to demonstrate the relevance of agricultural education outside of production farming.

The first step in making vocational agriculture relevant is to a larger and more technologically oriented group has already been made by many of the leaders in vocational agriculture. I refer to the change in terminology from vocational agriculture to "agribusiness." This change is significant because it is a crucial first step in articulating agriculture into the total school curriculum. Agriculture per se implies production farming to most people; agribusiness goes beyond that and captures the interest and imagination of a large group which is connected with the business and industrial end of agriculture -- with marketing, with entrepreneurial orientation, with all the agricultural products, agricultural services, forestry and ornamental horticulture. I strongly urge that teachers and students begin to recognize the term "agribusiness" and to communicate to persons outside the agricultural establishment that this change in semantics symbolizes agriculture's recognition that new, more modern techniques and fields must be included in the curriculum for secondary students.

The second step in diffusing agricultural education even to the point of carrying agriculture "out of doors" can make certain that the change in semantics is more than just that. It must reflect a true change in curriculum which involves emphasis on emerging occupations and up-to-date technology in agriculture and related fields. Only when the curriculum planned for agribusiness includes these new areas can it exist within the mainstream of school curriculum. This curriculum revision is justified by the benefits which disseminating agribusiness throughout the school program will bring. The first benefit is the broadening effect it will have on the agribusiness students themselves. Today, these students are not only going out into the fields, they are also going out to market, to marketing, to marketing agriculture, i.e., it has come from agriculture teachers talking to farmers and farmers talking to businessmen involved in agricultural fields, and agricultural businessmen and agriculture teachers discussing from familiar stations. This discussion and communication has been profitable in making the people directly involved in agriculture recognize the new problems and demands, but it has not solved the problems or met the demands because it has not extended to people in other fields. The theme of vocational education this month, "The Articulation of Agriculture into the Total School Program" is closely related to the image problem to which I refer. It presents an opportunity and a challenge to vocational agriculture educators to go beyond the traditional boundaries of their programs and to demonstrate the relevance of agricultural education outside of production farming.

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ARTICULATION THROUGH UNITED EFFORT

Wayne L. Sampson
Region III Vocational Director
State Board of Vocational Education and Rehabilitation
Springfield, Illinois

The school year 1970-1 is drawing to a close. Have you taken time to reflect on your programs, discuss it with your students, and consider the needs of your advisory committee and plan changes for the years ahead? Have you adequately told the local business and industry leaders how expanded your curriculum to serve everybody in your community? Have you made enough effort to keep the necessary communication on and assistance they need to understand the importance of agriculture in their lives?

Agriculture should be integrated into the lives of people of all age levels. An FFA member can talk to a kindergarten class and guide a field trip to his farm where he shows them his young lambs or baby chicks. The science or home economics teacher can use the information needed to show that the proper use of insecticides, or application of fertilizers, is not necessarily harmful and is essential for sustained high yields of quality products. The science teacher can vitally stress the importance of seed testing material, to explain the chemical reaction that takes place. Physics classes take on a practical meaning when students figure the drawbar pull on a plow or study the application of electricity to tractor engine operation. The English teacher may ask you for suggestions of topics on which vocational agriculture students in her class might write class papers. You can check their writings for topics of technical information. Have you explained your program to, or had an FFA member tell, the junior high school students the opportunities for a career in an agricultered occupation? The guidance counselor may welcome this assistance.

Agriculture is the nation’s largest industry. More people are engaged in agriculture than in the combined payrolls of the automobile industry, the steel industry, transportation, and all social studies teacher know that while few people are engaged as farm operators, more people are becoming involved in the services, marketing, processing and sales of agricultural products, that agriculture purchases over 50 billion dollars worth of goods yearly, that productivity in agriculture has increased more than twice in the last 25 years, that the average American spends only about 16% of his net income for food — the lowest in the world, and that farm products alone provide about 1 million non-farm jobs.

Production agriculture, farming and ranching — will continue to support our nation through the years. Even more important, many people dependent on the farmer and his operation. Without the food and fiber, the other aspects of processing and marketing would not be necessary. You have a responsibility to see that the story of agriculture is told to everyone from the kindergartener through adult life. Many communities the banker, the petroleum products distributor, the retail store owner depend upon the agricultural segment of the local economy. You may be the only trained professional agricultural leader in your local community. You must cooperate with the county extension agent and other workers in the field of agriculture to spread the story of agriculture and its contribution to our present economy, and especially farming, is not a dying industry. It is vital to our economy. When many of the occupations are moving from the soil, and more individuals are employed in related fields of work off the farm, it is necessary that you provide information to all individuals — from the youngster knowing how the wheat field relates to his bread, to the farmer who must meet the needs of the Agricultural Act of 1970 and its effects on farm organization and operation. As a supplement to the local high schools, AREA VOCATIONAL CENTERS fill a vital role in supplementing programs the local high schools offer. A carefully planned and well executed,适当 to high cost involved, lack of adequate financing or a lack of sufficient number of students to operate, an area center. Operating in coordination with existing local programs, a more diversified occupational program may result.

In Illinois, as in many other states, face public agencies are involved in the development, operation and evaluation of total, comprehensive vocational program. These include the elementary schools, secondary schools, area vocational centers and junior college.

The need for occupational information at the ELEMENTARY level is real, and with the legislation of the past few years, the opportunity for such a program exist. Providing occupational information at the elemental level in a format that has meaning to such age category makes it possible for students to choose areas of interest far more exploration from fact rather than fiction.

HIGH SCHOOL programs include both occupational orientation and preparation, as well as training programs. This includes background preparation for gainful employment and training designed to provide student skills and work attitudes needed for entry level employment or further training.

As a supplement to the local high schools, AREA VOCATIONAL CENTERS fill a vital role in supplementing programs the local high schools offer. A carefully planned and well executed, appropriately designed program which has been adapted to high cost involved, lack of adequate financing or a lack of sufficient number of students to operate, an area center. Operating in coordination with existing local programs, a more diversified occupational program may result.

Offering programs designed to prepare individuals for entry level employment or employment at the technical level, JUNIOR COLLEGES fill a void existing between secondary and baccalaureate degree level programs. Close student-teacher relationships, quality staffing and a student-centered approach makes this a meaningful educational agency.

Each of these agencies has the capacity of being a moving influence in society. By coordinating efforts, their possibilities increase greatly. In order to better coordinate activities of grade school, high school, area vocational center and junior college departments of agriculture in Illinois, a series of "Articulation Conferences" were planned and conducted to formulate "Biological and Agricultural Occupations Curriculum" of the State Board of Vocational Education and Rehabilitation.

The objectives of the conferences were:

1. To develop an understanding of the program offerings at the primary (kindergarten, grade school and area vocational center) and post-secondary level.
2. To coordinate content of courses to assure effective and smooth transition of students from secondary to post-secondary level.
3. To coordinate credit equivalency of programs from local high schools to area vocational centers, and to provide guidelines for developing the flexibility necessary to meet individual student needs and interests.
4. To develop a systematic sequence of courses — kindergartener through adult (continuing education).
5. To generate specific information for use by counselors and guidance personnel, as well as grade school, area vocational center, post-secondary and pre-school personnel.
6. To coordinate efforts to involve the adult population of the state, through school districts, segments of educational services tak- ing part.

(1) To coordinate efforts in local, educational and coordinating training stations, officers to, and coordinate, local, regional or state articulation supervision.
(2) To establish a total, coordinated, long range vocational education plan, through a committee for adults, for the state or region.
(3) To coordinate to teacher education institutions their needs in particular, so that curriculums at the middle college may be modified as needed to contain current.
(4) To establish a total vocational public education plan, with adult education.

Obviously, all the above objectives cannot be reached in one conference lasting only two and one-half hours. Many of the program objectives will be obtained only after local instruction, counselors, administrators and lay citizens spend countless hours of painstaking work gathering information, assembling data, developing new programs and evaluating and improving existing programs.

It was the hope of the state staff that as a result of the initial conferences, involving agricultural instructors, guidance personnel, administrators and state board members, subsequent meetings initiated at the local level would be held to continue the articulation effort. An Agricultural Coordinating Council was proposed to serve as the administrative structure of further articulation. Agricultural instructors and selected administrative personnel would comprise the membership of the Council. In function would be to determine articulation priorities, organize committees, arrange for and report on workshops and conferences to better articulate programs which would result in higher quality programs and better utilization of resources.

Realizing that time is a valuable resource to all educators, it was suggested that the research needed in order to make articulation programs effective be done through the aid of council committees. The committees might be composed of representatives from the local educational advisory councils, lay citizens or specialists.

From the Editor
WHAT SHOULD YOU TEACH?

Walter T. Bjurek
Teacher Education
University of Wisconsin
Madison, Wisconsin

Fred J. Pumper
Teacher Education
Western Illinois University
Macomb, Illinois

TEACHING OBJECTIVES

What category of subject matter contributed to some degree toward attaining each of the six general national objectives prescribed by the agricultural educators? The majority contribution of animal science, farm business management, and mechanics, plant science, soil science, and off-farm agricultural mechanics, is indicated. (Table I: generation agriculture competency). These subject matter categories also composed almost 85 per cent of the instructional time indicating that the production agriculture objective was receiving the major emphasis in teaching. It must be remembered that the objective of secondary importance was Objective II (agricultural related occupations competency). Instructors indicated that off-farm agricultural supplies, off-farm agri-

CURRENT OFFERINGS

Almost 85 per cent of the teacher's instructional time was allotted to teach-
ing the following subject matter categories (Table I): animal science, farm business management, agricultural mechanics, plant science, soil science, and off-farm agricultural mechanics. The category of subject matter headings and careers and leadership are included with the previously identified subject matter categories, it included 90 per cent of the total instructional time in four year high school curricula.

Instructional time allotted to off-farm agricultural subject matter categories included off-farm agricultural mechanics, off-farm agricultural supplies, placement, advancement, and continuing education subject matter.

<table>
<thead>
<tr>
<th>Subject Matter Category</th>
<th>Mean Per Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science</td>
<td>25</td>
</tr>
<tr>
<td>Farm Business Management</td>
<td>10</td>
</tr>
<tr>
<td>Agricultural Mechanics</td>
<td>15</td>
</tr>
<tr>
<td>Plant Science</td>
<td>15</td>
</tr>
<tr>
<td>Soil Science</td>
<td>15</td>
</tr>
<tr>
<td>Placement</td>
<td>10</td>
</tr>
<tr>
<td>Advancement</td>
<td>15</td>
</tr>
<tr>
<td>Off-farm Agricultural Mechanic...</td>
<td></td>
</tr>
<tr>
<td>Off-farm Agricultural Supplies...</td>
<td></td>
</tr>
<tr>
<td>Placement...</td>
<td>10</td>
</tr>
<tr>
<td>Advancement...</td>
<td>15</td>
</tr>
<tr>
<td>Other...</td>
<td>5</td>
</tr>
</tbody>
</table>

WHAT DOES THIS SAY ABOUT AGRICULTURAL EDUCATORS?

First — Current vocational curricular offerings in Wisconsin are primarily production agriculture oriented, and vocational agriculture, the production agriculture oriented. This is illustrated by the instructional time allotted to production agriculture subject matter as constituted to agricultural objectives. The greatest emphasis, and the very low relationship between economic area and time allotted to categories of subject matter. There are 5 and million men employed on farms and in agricultural businesses in the Midwest, yet less than 5 per cent of the teachers time is devoted to off-farm agricultural occupations. More agricultural related occupations such as several farm operations, merchandising, advertising, farming, marketing, business finance, accounting, and other is must be taught in the curriculum so that there are more competent men available for employment in agricultural related occupations.

Second — A strong production agriculture curriculum should be maintained in certain areas such as the Midwest. Of the Nation's land in farms, one-third of the land is in the Midwest and southeastern states. The states of Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin, in this region we find that 85 per cent of the corn, 85 per cent of the oats, and 85 per cent of the feed and 85 per cent of the hay. There is a 50 per cent of all livestock are grown or raised. It is also a need for a strong production agriculture curriculum to train and educate students for the agri-business market. The efficient production of food and fiber is essential for our growing population, a need that will be charged with this task.

Third — There is a need for a re-version and expansion of pro-service agriculture. Curriculum changes in agriculture education programs to increase the teacher's competency in the agricultural related occupations is needed. Course work and work experience which pertains to agricultural related occupations should be added to the teaching programs. State curriculum guides or guidelines should be developed and/or revised in the future. A Vocational agriculture curriculum will prepare students for employment in a variety of areas in agriculture, enrollment in two year technical agricultural courses, and for successful pursuit of higher education in Colleges of Agriculture.

Although this article was submitted by Dr. Haxor, it was modified and improved by Dr. Haxor. The article was published by the American Journal of Education.

THE AGRICULTURAL EDUCATION MAGAZINE

JUNE, 1961
WHY THE LAND LABORATORY

E. M. Juergensmeyer
Department of Applied Behavioral Sciences
University of California
Davis, California

and

Lloyd Donald
Teacher Trainer
Fresno State College
Fresno, California

One of the decisions new teachers frequently face is whether or not to accept employment in a school with a land laboratory. In many cases they may have completed their student teaching experience in a school with a land laboratory or school farm, and in their home state developed mixed emotions as to whether, how, and how often it functioned, and whether or not they wish to continue teaching with such a facility.

Land laboratories are acquired in a variety of ways, not all carefully thought out to indicate from an educational standpoint whether they are desirable facilities to have. In many instances they are inherited, donated, or land is made available from a future building site. Sometimes government agencies (e.g., military) erects such a bargain as to be irresistible to school districts. In many cases, experienced teachers, at will end provide 'projects' for students, group the school farm as a panacea for providing supervised work experience activities. Often it does meet this function admirably. Occasionally a teacher who has always wanted a way to do something would not afford it finds in the school land laboratory the answer to his desires.

The school farm, perhaps on occasion to himself, becomes his "thing" or hobby. He spends countless hours, works hard and enjoys every effort to make it a showcase, unaware of the trend or drift the total program of education in agriculture is taking in his department. Student teachers in such a situation may see the total picture more objectively than the supervising teacher himself because he is so close to the situation that he is emotionally involved. The dilemma then revolves around what is the function of a land laboratory, why they have one, and how and how can it serve best.

TABLE 1

<p>| TABLE 1: EFFECTIVENESS OF SCHOOL FARM LABORATORIES IN SEVEN REGIONS OF CALIFORNIA |
|-----------------------------------------|----------|----------|--------|----------|--------|----------|</p>
<table>
<thead>
<tr>
<th>Region:</th>
<th>School</th>
<th>Farm</th>
<th>Land</th>
<th>rating</th>
<th>Class</th>
<th>size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern</td>
<td>321</td>
<td>57</td>
<td>64</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>178</td>
<td>49</td>
<td>64</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern</td>
<td>178</td>
<td>49</td>
<td>64</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Coast</td>
<td>321</td>
<td>57</td>
<td>64</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Coast</td>
<td>178</td>
<td>49</td>
<td>64</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Coast</td>
<td>321</td>
<td>57</td>
<td>64</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Coast</td>
<td>178</td>
<td>49</td>
<td>64</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The answer seems relatively simple. Its function is an extension of the classroom and other learning activities indicated in the curriculum. It is not a place for students to have projects unless, of course, a student having a project needs the criteria of extending classroom learning activities. Unless these criteria is continually tested and practiced, it can soon become a backwater, a place and not immediately an eyesore to the community.

As indicated in Table 2, a larger farm laboratory does not necessarily make it better on one hand, a smaller laboratory being more effective or at least performing its function equally well. If it is the decision to cost, operating expenses, ease of maintenance, etc., seem to follow.

In undertaking efforts to expand classroom activities by use of a land laboratory, it should be done as economically and efficiently as possible with undue burdens to the community. Guidance for acquiring a land laboratory and in developing it if it can already exists include the following suggestions:

1) An advisory committee to share responsibility, lessen the pitfall, and link the program with the community.

2) To keep it small. From 2 to 5 acres is sufficient to perform all functions and make it manageable. Occasionally larger sizes (up to 10+ acres) may be suitable for certain geographical locations.

3) Contingent to the school grounds or at least within walking distance for maximum basic and other transportation problems if possible.

4) Provide for financing from district funds. If it is designed to support itself, it loses its educational purpose and endangers the future of the program by reducing or ending its future development.

5) Hire a caretaker at least part time whose primary responsibility should be the manager not the worker.

6) Keep an attractive showplace. It should look better than most farms in the district. Landscape it, eliminate weeds, waterholes, gravel the roadsides, etc. A power sprayer to seed, spray weeklies, spaying, mixing of sprayer is an essential piece of equipment. (It is an essential piece of equipment linked to both education and maintenance.)

Do not keep breeding stock on it. In summertime livestock should be off facilities in order to dry out, free itself of flies and eliminate flies. A teacher can be supervising student projects and work stations where work experience students are located.

8) Keep the number of buildings to a minimum. Make them multi-functional, and designed to make the teaching function and facilities for livestock and agricultural machinery can be used together. Suggested activities for using a school farm laboratory are:

1) For teaching operation and maintenance of agricultural equipment.

2) Demonstration plots, fertility trials, pruning young trees, vines and ornamentals (pull out trees, etc. after serving their purpose), development of foretry plots and wild game management programs.

3) Short feeding trials of livestock, 60-00-120 days. Use large numbers per carload lots so the operation is based on commercial standards. Include classes in marketing, planning, financing, insurance, and other management decisions.

4) Demonstration of livestock skills such as marking, docking, castrating. Practice livestock selection and judging using animals indicated under suggestion 3 and 4.

5) Grazing place for livestock prior to fairs. Practice feeding projects being in their individual animals several days before leaving for shows, country fairs. Give a local exhibit to other school classes and practice showmanship before other students. All animals are then ready to leave at the same time and have a chance to participate in future demonstration facility.

6) An attraction for visitors and guests. Use the laboratory during Farm-City Week, open house, etc. The land laboratory should be a place students are proud of and one that their parents and administrators like to show to guests.

7) Opportunity for production projects for urban youth.

8) Work experience projects for the handicapped and disadvantaged.

9) Exploitation learning by reducing the number of tasks that ordinarily would be taken away from the school.

10) Make cost-effective type programs accessible to students.

11) Centralize all phases of the teaching program to increase efficiency of the faculty.

Vocational agriculture teachers list the following ways to improve their program:

1. Provide more security to help eliminate damage and destruction of present property.

2. Require that land laboratory to permit pasturing with livestock and help eliminate hens.

3. Construct storage facilities for feed, fertilizers, spray materials and tools.

4. Develop nature trails as rural recreation facilities.

5. Provide permanent housing for farm laborers.

6. Insulate water pipes to prevent freezing.

7. Build ornamental horticulture facilities to include house, garage, house, lawn, composting beds and provide storage space for cold frames and demonstration plots for such.

8. Install drainage and walkways to farm buildings and surrounding areas.

9. Install permanent irrigation system.

10. Add land to present laboratory to make it frequent and permit more student use.

11. Establish a school farm laboratory fund to provide for annual improvements and to repair and replace equipment as necessary.

12. Add test plots of various kinds to stimulate learning.

13. Establish various classes for farm laboratory has year around use.

14. Landscape facilities to facilitate farm laboratory activities and enhance learning by doing at the same time.

15. Use land to utilize more effectively for truck crop projects and other general uses.

16. To increase community interest in the school land laboratory, instructors suggested:

Publicize what is being done with the farm laboratory in the way of student use through demonstration plots, show how it supplements classroom and laboratory practices.

2. Invite news media to visit the farm; feature stories may be prepared.

3. Informed service clubs of need for funds to support individual and group projects on the farm.
FORESTRY IN THE HIGH SCHOOL PROGRAM

Jewett Mossey
Vocational Agriculture Instructor
Lansing, Michigan

Forestry is one of the fields where there is need. Forestry programs have been forced to high school groups as well as to high school students with varying degrees of success.

The school forester or a forestry laboratory is fortunate. All that is needed in addition is interested students and a qualified instructor. This combination is probably the most difficult to come by. Many instructors of vocational agriculture have had some experience in timber work, but there is a difference in coming in contact with small woodland or cutting fireswood versus a large forest and teaching forestry to high school students.

The first course in forestry management offered at the Woodland School Vocational Agriculture Department was developed with the help of the foresters from the District Farm Forester. He was interested in the opportunity offered at Woodland for teaching boys in woodland management. It was decided that the senior class in vocational agriculture would participate in the course.

The first experience involved class work with the students being asked to bring in samples of forest identification. Along with this activity, the various products made from different kinds of trees were discussed.

From the classroom, the group moved to the 80 acres of timber on the farm where trees were identified by bark and leaves identified by the instructors. In this way several lessons needed to be cut as they had reached their proper maturity.

At this time, the students moved back to the classroom to study the needs of the adult industry. One of the 1993 projects conducted in cooperation with the Grand Rapids Michigan School Board, Michigan Department of Education, United Migrants for Opportunity Inc. and The Rural Manpower Center at Michigan State University is designed to assist unskilled migrant laborers become tractor operators. Pro- grams under the Manpower Development and man- 

A new area of forestry management program is fire prevention. Here the school foresters and other foresters were asked to help with the teaching. These people hold firsthand knowledge of fire and the need to unit the forest. They were willing to be of assistance. Along with firefighting the students learned to use the "Little Beaver" tree killer. This is a motor driven device that is carried on one's back and has a flexible shaft. This equipment made the job of the farmer and forester easier by preventing the spread of forest fires.

The timber management course would not be complete without the planting of trees to take the place of those that have been cut. The development of a clayfield had been considered in the total programs of timber management. The development of the clayfield provided a different picture of the farm's land use. Farmers have practiced to reduce the amount of timber standing on the farm. The clayfield provided a means for the farmer to redevelop the land that was originally forested.

As a result of our programs we are planning to have one or more students work with the Conservation Commission in the future. This will be a new experience for the students and it is hoped that the program will be expanded as we continue our work.

With the changes in the philosophies and goals of voca- tion agriculture the instructors find themselves confronted with the increasing pressures of "keeping up." As a result, foresters must continually improve and re-evaluate their programs to keep up with the changes in society.

Developments of recent years indicate a major shift in the quality of labor required on farms. Traditionally farmers have obtained hired labor from an abundant supply of individuals with low skills either as migrants or local community. These individuals are employed in situations which generally required a "strong back" but no real need of "a steady mind." They were employed to do hard physical work; however, it was work in which little skill training was necessary in order to meet the requirements of the job. In the past the labor supply has been generally adequate to meet the needs of farmers. Events of recent years such as the cutback in imported labor, social reaction to the plight of farm workers and attempts at unionization, with the accompanying farmers movement to these needs, have provided a different picture of the farm labor situation. Farmers have reacted to these changes rapidly mechanizing their operations. The trend has been to provide education for people to enter nonfarm agricultural occupations. However, there has been little concern for preparing these individuals for farm occupations. The advent of increased mechanization on farms has placed a new emphasis on training rural people as workers on farms becomes important. In the future, as has been indicated, many farm workers are going to be displaced because of mechanization. This suggests that we must have large numbers of individuals in rural areas will be out of work and, if the concept of farm labor is valid, they will also be necessary skills to fill skilled jobs on the farm or move to non-farm occupations. Currently in Michigan several programs are in operation to assist in retraining displaced farm workers. Emphasizes under the Manpower Development and Manpower Training Act are providing skills to rural people through their Dairy Feed Technology Course and Power Mechanics Courses. Individuals who are enrolled in these courses are primarily rural unskilled workers. However, upon completion of the courses there has been a high demand from employers for their services. The demand has also reflected in the higher wages offered to graduates.

The programs mentioned above are effective in retraining adults, however, at present there are not enough to meet the demands of our farms or workers or farmers requiring specialized skills.

The challenge to agricultural educators appears to be clear. More programs must be provided for retraining displaced farm workers. Emphasis must be placed on developing educational programs that will provide a maximum of transferable skills from one occupation to another whether it be in farming or in a non-farm occupation. Also, existing programs in vocational agriculture must become more concerned with training students to meet the new and emerging skilled occupations within farms. Agricultural education should not only be concerned with providing educational opportunities for those trained to work in agriculture but the entire agricultural occupation and those who plan to enter non-farm agricultural occupations. Opportunities must be increased for developing skilled farm labor.
A two-year pilot program was conducted in two high schools in Kentucky presenting an interdisciplinary approach in vocational education. This effort featured cooperation on the part of teachers representing four vocational services, the guidance counselors and the principal. Agriculture was one of the four vocational services involved. The 57 students enrolled the first year definitely needed exposure to the world of work, but were not enrolled in regular vocational programs.

The major objective of the program was to develop in students knowledge and skills common to several vocational areas which would assist them in making a sound beginning in the world of work. An attempt was made to attain the objective through classroom teaching, introduction to various occupations, observation of jobs and on-the-job training. The first year of orientation and observation was designed to prepare students for part-time (eight to fifteen hours per week) occupational experience which was to be the second year. The students during the second year were on their own to a great extent. They met with a teacher one hour per week to make plans for getting the right kind of experiences and to prepare for these experiences. The teacher was also responsible for supervising the student during his on-the-job training.

COURSE OF STUDY

The course of study for the first year of the program consisted of orientation, grooming and dress, applying for a job, self-management, health and safety, business organization, labor laws, union and social security, and human relations and personality development. The students were exposed to the opportunities in the world of work that related to Business and Office, Home Economics, Agriculture and Distributive Education. These four areas were represented by a team of teachers from each school. In addition to instruction by the vocational teachers, the guidance counselors provided occupational information and part of the course instruction through group and individual counseling.

Each student observed four businesses during the year. Prior to each observation, time in class was devoted to preparing students for the experience. Evaluation of the visits was made after each observation. Following the fourth observation, each student selected a place for his on-the-job training.

RESULTS OF THE PROGRAM

Fifty-one of the 57 students completed the two-year pilot program. These students and teachers thought the first year was the strongest part of the program. This involved team teaching, a broad course of study, orientation and observation of the world of work and career planning. The students' criticism of the second year was that the one hour per week with teachers was not adequate to prepare them for their on-the-job training.

In summary the major strengths and weaknesses of the program were:

**Strengths**

1. Team teaching
2. Orientation to the world of work
3. Observation of jobs
4. Guidance (Group and Individual)
5. Development of favorable student attitudes toward work

**Weaknesses**

1. Not enough classroom the second year
2. Lack of supervision for on-the-job training
3. Lack of depth of training in technical skills

RECOMMENDATIONS

The following recommendations were made:

1. The second year (on-the-job training) be dropped.
2. Offer the program for 3rd grade students and emphasize orientation and observation.
3. Following the orientation and observation, guide students into a vocational program in the high school or in an area vocational school so they may get training in a specific area.
4. Use a team teaching approach by involving the vocational teachers in a school.
5. Follow a broad course of study similar to the one described in this article.

There are times when the regular vocational agriculture programs in a high school does not meet the needs of all students who desire vocational training in agriculture. One of the important reasons may be a lack of student interest as a result of a poor guidance program, a lack of knowledge about vocational agriculture by students, lack of information by parents, or a poor vocational agriculture program in the school. Regardless of the reason, some students should be enrolled in vocational agriculture who do not enroll.

If the vocational agriculture teacher is involved in this program, he will have an opportunity to orient students to the broad field of agriculture and to guide interested students into vocational agriculture. If the teacher is not involved, some potential agriculture students will continue to enroll in other programs rather than vocational agriculture.
ADULT EDUCATION IN AGRICULTURE

R. E. Powell, Assistant Supervisor
Agricultural Education
State Department of Education
Athens, Georgia

Listed in the Georgia Plan for local school systems is the proposition: "the thrust of the amendment is directed toward the responsibility of education to prepare persons for life." Work represents the central focus of man's life. No industry has changed more rapidly nor has new technology come faster anywhere than to the broad field of agriculture.

The need for adult education will continue to increase. No longer can the nation produce the needed food and fiber in the future without the need to be better trained than ever before. Our food and fiber needs are increasing, while the number of persons producing percentage wise, is decreasing.

Adult farm education becomes more important as agriculture becomes more complex. In Georgia, local vocational agriculture teachers project in their annual programs of work, course offerings for adults in their respective communities.

There are community-wide facilities such as the Vocational Farm Mechanics Laboratory, food preservation centers, and livestock exhibit farms, where varying kinds of training programs can be offered.

We have in Georgia 22 area adult teachers of vocational agriculture who devote approximately 63 percent of their time to teaching adults. Fewer than 1/3 of their time is devoted to training in areas other than production agriculture, particularly in the broad area of Agri-Mechanics.

These area teachers have their head-quarters at the District Vocational Agriculture office. They are assigned given number of regular teachers of vocational agriculture and school systems with whom they work.

In 1969-70, three of these men located in the Northeast Georgia district, taught 87 courses, consisting of 501 meetings, where 1,552 adults were enrolled.

Course offerings in Farm Electrification, Grain Sorghum Operation and Maintenance, Farm Water Systems, Electric Motors and Controls, Controlling Diseases and Parasites of Beef Cattle, Feeding Beef Cattle, Farm Income Tax and Social Security are the kind of courses being taught to those adults who attend because they are interested and have a problem in, or related to, the courses offered.

The regular teacher of vocational agriculture chooses the course offering after reviewing local needs with his advisory committee for his program.

Usually a local school administrator is a member or attends these planning sessions with the teacher and the advisory committee, and together they recommend choices for usually two or three course offerings per department per year.

It is the responsibility of the local teacher to arrange for a meeting place, laboratory facilities, demonstration site, etc., in addition to organizing and inviting the class group.

An example of such a course offering is a course offered in Farm Structures (Pole Frame) where two 24-hour meetings are held in a classroom building where the area teacher, teaching such things as planning, design, type, strengths of lumber, pole size, diagramming, location, load limits of both live and dead loads, kinds of fasteners, laying out a building, etc.

Two additional classes (usually a day plus preparation planning time) are devoted to the actual construction of a building on some member of the class's farm. The entire class is invited to participate and usually at least one-half of the class group will spend a part of the day at the demonstration site assisting in the work, while other members of the class and even some who do not attend, come by later to view the project.

A large share of the success for adult work in Georgia is due to our area adult teachers who serve two basic purposes. One, to teach adults in problem areas which farmers have and often, give special technical training to the regular teachers. In addition, these area teachers offer in-service training in their area of specialty to local teachers during the summer months. This qualifies the local teacher to better teach his all-day students the jobs dealing with the areas aforementioned.

One of the critical problems with adult instruction is teacher preparation. By the nature of the area teachers' jobs, he is in position to be trained more extensively and completely than the local teacher. Too, he is offered more time for good preparation.

With the work load of all-day classes, other school responsibilities, student evaluation, FFA, contests, etc., local teachers do not have adequate time to do quality preparation and teaching in adult education.

Our adult work needs to be high quality, top level or not at all. We maintain the need is there and we will strive to meet that need.

CONTINUING EDUCATION FOR THE AGRICULTURAL OCCUPATIONS

Leon A. Mayer
Division of University Extension
University of Illinois
Dixon, Illinois

The basis of this rationale is that vocational education in agricultural education must grapple with the notion of individual worth and personal fulfillment. Each individual not only has tremendous capability for development or fulfillment, but each person is also worthy of educational efforts designed to help him develop. Success in an occupation, or advancement in a career, are not the important factor in personal fulfillment. Adult occupational education of a continuing nature, which is provided in a follow-up to pre-employment occupational education can contribute toward success in an occupation, career development, and continued fulfillment. Adult educationalists have known for a long time that adults can learn. The technological revolution has not spurned the agricultural occupations - workers in agricultural occupations become obsolete as do workers in other occupations, unless appropriate in-service training opportunities are provided. The economic returns on investment are good in adult education designed to develop people.

As a matter of public policy, the vocational education legislation, from the Smith-Hughes Act to the present, has directly encouraged adult education, or has been capable of a broad enough interpretation so as to permit adult educational programs.

How can a teacher of agricultural occupations in a public school or in a college proceed to develop continuing education?

Some of the good program planning procedures which have been fully used on pre-employment programs can also be applied to the development of educational opportunities for adults who are already engaged in an agricultural occupation.

An advisory committee should assist in the determination of needs for adult occupational education. Various groups to be served should be identified. Local school boards and county agricultural education teachers should be involved in the development of policies for agricultural education which would permit and support efforts to include adult education for the agricultural occupations as a part of a total comprehensive program.

In-service training needs of workers may have common elements in several agricultural occupations. Workers who are assigned supervisory tasks, or who aspire to be supervisors, will probably need competencies which would be quite similar for each of several agricultural occupations. People engaged in such work may be similar in need for training, regardless of the occupation or company with which they are affiliated. Some of the competencies needed by adult workers in non-farm agricultural occupations are similar to some of the competencies needed by adult farmers. Therefore, in the interest of efficiency, continuing education programs for the agricultural occupations should be planned so as to group persons from several occupations who have similar educational needs.

However, specialized continuing education programs, perhaps of a technical nature, may also be needed. Here again, workers from several occupations should be grouped, if possible. The occupational education teacher in the high school and in the junior college may need to utilize his advisory committees for further college program to re-evaluate previous efforts in adult farmer education programs. Especially in the case of a community college, vocational education involves the needs of some of our better farmers. Farmers who have been the faithful members at almost all of one traditional adult farmer courses and county extension programs report that much
THE SYSTEMS APPROACH TO CURRICULUM DEVELOPMENT

James J. Albracht
Teaching & Learning
Kansas State University
Manhattan, Kansas

The use of the systems approach is an effective method to use for curricu-
ulum development. A systems approach is based upon behavior-
al objectives* and includes the development of efficient-
ness plans for the accomplishment of the behavioral objectives. The curricu-
ulum which is developed should include the hypothesis that it is the best curriculum which could be developed at this form and of this time. The curriculum is tried and tested and the evaluation instruments ade-
quately measure the accomplishment of the behavioral objectives by the stu-
dents.

The curriculum is the result of the best knowledge available when the existing scenario is in the planned area. It is assumed that careful consideration was given to the curriculum and the actual course of the behav-
ioral objectives. The guidance of the teacher and the instructional methods are the most important single contribu-
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*Curricula are practices which are varied for practical purposes or for special purposes.
S. A. Gilliam, Principal
G. W. Carver High School
Winston, North Carolina

For a number of years there has been talk that Carver School was not serving the needs of the younger group of providing a program of Adult Education which would interest many adults. The real concern of teaching is to direct the growth and development of each individual along desirable lines that will fit him to become a happy, well-adjusted, contributing member of society. Even though many teachers are trained and certified in adult education programs, they still lack the professional outlook and competencies necessary for teaching adults.

The first step to evaluating the teaching program was to make a systematic examination of the library materials dealing with adult education programs. Secondly, a check list with items arranged under two general headings—characteristics and activities of adult education was completed by each teacher in Carver School to determine the needs of Carver teachers in adult education.

The author assumed that an in-service program in adult education would improve instruction and consequently improve the development of the people involved. It is the contention of the writer that the in-service adult education program would meet the needs of all teachers equally and advise from many sources in meeting the increasing responsibilities.

The objectives of the program were:
1. To gather information on adult education.
2. To gather information on the needs of Carver teachers and adults.
3. To develop alternative procedures for organizing a faculty for an in-service adult education program.
4. To identify a variety of teaching methods appropriate to the needs of adults.
5. To develop a positive attitude toward the use of adult materials as guides to adult education instruction.

There are differences of opinion as to what adult education is and what it should do. Those differences are gradually decreasing, however, as adult education matures. This can readily be accomplished in a school where one recalls that it is a formal and organized activity, adult education is comparatively new, and it is carried on in many different ways by different agencies.

Bryson defines adult education as all activities with an educational purpose carried out by people in the ordinary business of life who use only part of their time and energy to acquire instructional equipment.

Morgan, Holmes, and Bundy contend that adult education may be thought of as the conscious effort of a mature person to learn something new. It should be made clear that the concept of adult education held by those people excludes full-time school and college work which lead to a diploma or degree even though the student may be mature. The concept also excludes all the incidental learning that takes place in connection with the routine activities of everyday living.

Morgan, Holmes, and Bundy state that adult educators makes adult education an integral part of the older person’s superior ability to solve problems which require reason and judgment. Adult education ties in with the experience of adults, with their behavior patterns, with their basic misconceptions, and with their environment. Adult education tries to discover what kinds of material mature people can best learn and by what procedures they can learn most effectively. Adult education is also concerned, as is education at other levels, with the problem of determining the true objectives of the material to be taught.

Smith, Krouse, and Atkins define adult education as education ranging from the basic skills of reading, writing and arithmetic to the propagation of social and economic problems.

Well informed people say that every community should have a property of adult education as an integral part of the educational activities of the school. This will be carried out in various other agencies of the community should cooperate in sup-

port of programs of education for adults.

The school today can go a long way toward providing more opportunity for democratic participation. Whether a teacher is new to the school or an "old timer," whether he is a beginning teacher or one of long experience, there is a need for an effective adult education program. Secondly, programs of adult education need to be more concerned about the problems of all adults. Too many adults appear to be under strain attending class, and are not able to respond in class. Particularly there is a need for setting up situations which will remove tension producing stimuli and foster a more wholesome resolution of personal conflicts. A well-planned program of adult education will have a long way in meeting this need. In the third place, existing programs of adult education need to increase their effectiveness in helping adults solve everyday problems. In the fourth place, the possibilities of growth in adults is in a high order, awaiting wise, intelligent guidance through helpful and stimulating experimentation.

In light of the information found in this community, the following recommendations are submitted:

1. That the school inform the public regarding objectives of adult education.
2. That the primary purpose of adult programs be geared to meeting adults.
3. That an adult education program be developed which will provide opportunities for participation and advancement for those affected by the program.
4. That adult programs grow out of felt needs identified by adults who participate.

If educators are to realize the real potential of adult education, the adult education curriculum must become a creating, releasing experience rather than a dulling series of passively awaited indoctrination exercises.


Helen Thomas
Division of Agricultural Education
University of Illinois
Urbana, Illinois

Since the enactment of the 1963 Vocational Act, new program models have been suggested that deviate from the traditions of "V-A-A," I, II, III, and IV. The 1966 Vocational Education models emphasize procedures for innovative models that will allow a teacher of agricultural occupations (synonymous to vocational agriculture in this article) to meet the educational needs of all youth who have an interest in agriculture. New models need to be developed that allow a student to have the opportunity to formulate his own occupational objective and then pursue a course of study that will lead to entry level occupational proficiency.

Models that have been developed present operational problems that present their implementation by a single teacher of agriculture. By investigating Hickley's review of program models it may be observed that model I and model II channel students through the farm program through their sophomores or junior year in high school, thus limiting the flexibility of the program for both the students and the teacher. The students are forced to study areas of agriculture in which they may have no interest. This procedure results in discouraging students who have an interest in only one area of agriculture from entering in courses in agriculture. The teacher is limited in the number of new courses or occupational options that he may offer by the two or three courses which he is compelled to teach each year under models that have been proposed. Thus, if a teacher is to implement a broader program of agricultural occupations, the only possibility that seems feasible is to increase the number of teachers.

High school students are interested in specific areas of agriculture and can profit from specialization as early as they are able. Also, entry into the agricultural occupations program students have varying degrees of sophistication in knowledge and skills needed by an agricultural workforce. This knowledge and skills possessed by students indicate the need for more than one introductory course.

An introductory course in agricultural occupations is an essential part of the total program. Where possible, introductory courses should be offered for students with special needs, students whose interests lie in the applied biological science, and students whose interests are in production agriculture.

The objectives of this course are to:
1. Introduce the student to the major areas of agriculture.
2. Help students identify their career objectives.
3. Get the student interested in agriculture.

Many courses of one semester or longer in length can be identified as common to two or more areas of specialization.

Specialized courses are required for some areas of specialization.

The amount of work experience is desirable and should be related to the student's occupational objective.

Based on these components, this model allows the student to enter the agricultural occupations program by enrolling in an introductory course designed to meet his needs. Having completed the introductory course, the student may select his occupational objectives and proceed by taking courses from the core of common courses which will lead to occupational proficiency in his area of specialization. The student who is unable to determine his area of interest may enroll in core courses in agricultural occupations until he has identified an area in which he has interest.

It is necessary to implement this proposed model in a series of steps. Where an on-going program exists, the upper level students have had much of the material that might be included in a semester-type course. Thus the fourth year of the present program presents the logical place to begin to divide the program into meaningful semester-length courses. The fifth year or capstone year is taken open to all students who have completed an in-
TEACHING RELEVANT JUNIOR HIGH VOCATIONAL COURSES

Roy D. Dillon
Teacher Education
University of Nebraska
Lincoln, Nebraska

As teachers plan meaningful programs in vocational education there is a need to develop relevant vocational exploratory programs at the junior high school level. These courses should explore the world of work, identify the levels and occupations that exist and are emerging, and the competencies and traits needed in responsible jobs.

It is realistic to expect that a junior-high age student can explore occupations in the work world, and after structured exploratory experience, make a tentative choice about an occupational area which he may pursue in the secondary school program.

School dropout studies show that planned vocational education programs will retain potential dropouts in school. In addition, early counseling and systematic course planning will enable students who may not complete college to gain marketable vocational skills while still in high school.

This study, to determine how many Nebraska teachers of vocational agriculture were presently teaching junior-high vocational courses, and their course objectives, was based on 105 responses, representing 94.6 per cent of the Nebraska secondary schools which conduct vocational agriculture programs.

Eighteen, or 17.4 per cent, of the agriculture teachers are conducting a junior high school course at the 7th or 8th grade level.

New state plans for vocational education developed under the federal economic and educational development programs for students with special needs and, at the same time, increasing the number of students involved in the various occupational programs. Thus the impetus for program development has been provided.

Today, in our streamlined world of conveniences, the need is not as great to return to farming as it was ten to fifteen years ago. Many individuals do not realize how many people are involved in getting that piece of meat or glass of milk to their table. They take many of the products and conveniences for granted. Tipton, Indiana, is a rural community, yet there is a need to discover the elementary part of agriculturalness. This is a part of the agriculture program of Tipton Community Schools.

The future, "becoming aware," comes to mind when I think of this program for seventh and eighth grade boys. Seeing an appreciation of agriculture in the eyes of my students is the greatest reward I have gained in my two years of teaching agriculture.

Junior High students can live in a world of appliances and technology. At Tipton, I am fortunate to have a dedicated group of students with the fundamentals of agriculture. With both rural and city students the discussion of farming is a means to an end. The curriculum covers numerous aspects of agriculture, including horticulture (covering lawn to trees and shrubs); land use (we have done four homes in Tipton); the principles of engine operation; agricultural careers; conservation; metals along with discussion of animals and crops which include breeding, care and management. It is essential that all young people be exposed to the units of instruction being offered in our Junior High Program.

The class is exploratory and permits student participation. Taking turns in the watering and the management of the greenhouse is one of the jobs the students share. They plant seeds, shoot cuttings, and transplant needlings. Further, the lessons include an outdoor laboratory where students work with horticulture. They also learn to use the selling of meat, produce, and eggs.

The junior high situation is not typical of the conventional high school agriculture class because attempts are made to have all students become acquainted with various aspects. In the elementary grades students discover conservation, or the possibility of hatch chicks but the junior high school students are ready for a more indepth study.

The Tipton Exploratory Agriculture Program is an exploration into the educational aspects of agriculture class because attempts are made to have all students become acquainted with various aspects. In the elementary grades students discover conservation, or the possibility of hatch chicks but the junior high school students are ready for a more indepth study.

The Tipton Exploratory Agriculture Program is an exploration into the educational aspects of agriculture class because attempts are made to have all students become acquainted with various aspects. In the elementary grades students discover conservation, or the possibility of hatch chicks but the junior high school students are ready for a more indepth study.
Current social, economic, political, and technological trends have accelerated a need for systematic programs of occupational exploration in elementary and secondary schools. Planning and preparation for many present day occupations require deliberate individual action based upon knowledge of educational possibilities and employment opportunities and requirements.

Individuals frequently must make career decisions before having opportunity for adequate exploration of occupational alternatives. Elementary and secondary students are becoming deprived of knowledge of their own parent's occupation because of physical and conceptual distances. Lack of this fundamental connection with the world of work diverts individuals of the opportunity to form constructive attitudes about the desirability of vocational competence and economic independence. Without knowledge of the nature of the world of work and its requirements, or information on the wide range of educational opportunities and requirements, the individual is in a poor position to make wise career decisions.

Given the opportunity to gradually and systematically evaluate interests and aptitudes, occupations become classroom and work-related experiences. The individual is more likely to make a realistic and valuable contribution to school and work.

From the Research Editor's Desk
J. David McCracken

**OCCUPATIONAL EXPLORATION -- AN ASPECT OF VOCATIONAL EDUCATION**

Wesley E. Bulke
Center for Vocational and Technical Education
The Ohio State University
Columbus, Ohio

The Agricultural Education Magazine
June, 1971

**Current Program Status**

To be successful, occupational exploration will need to provide the entire school program and environment, requiring total understanding and dedication by all vocational and general educators. The author reviewed research, programs, and literature relating to the history, rational, and structure of occupational exploration at all educational levels to formulate the following conclusions:

1. Limited research is available on specific occupational exploration programs; however, considerable material was found in the area of vocational development which indirectly applies to world-of-work activities.

2. Occupational exploration programs for the junior high school educational level are the most numerous and highly developed, probably due to the belief that programs at this level are the most productive in relation to the resources available for developmental purposes.

3. Junior high school occupational exploration programs are composed of separate occupational information courses or are interdisciplinary in nature. Newer programs seem to favor the interdisciplinary approach to provide occupational exploration.

4. Emphasis in occupational exploration appears to be on the development of world-of-work programs and activities at the elementary school level.

5. Elementary occupational exploration programs tend to be highly guidance-directed and interdisciplinary in structure.

6. There is a critical shortage of professional, educational staff who understand the career development process and have the necessary expertise to direct occupational exploration program activities.

7. The majority of the programs reviewed were based upon the developmental or self-concept theory of vocational development.

8. The trend is toward comprehensive vocational education programs, stating plans for educational programs.

9. The trend is toward comprehensive vocational education programs, stating plans for educational programs.

10. Many occupational exploration programs are operating on restricted budget from the 1968 Vocational Education Amendments, The Elementary and Secondary Education Act, or private foundations. Unless educators realize the value of such programs to individuals and community support, there is danger of discontinuing the programs when funding sources are withdrawn.

11. Vocational guidance has highly sophisticated techniques for providing occupational information in the high school, many based upon the capabilities of the computer.

12. The field of industrial arts has developed several innovative programs providing occupational exploration experiences at the junior high school levels which may serve as a means or guide for programs in other educational levels.

**Recommendations**

The recommendations developed from this review are:

1. Career development programs must be an integral part of the entire educational continuum and school environment.

2. School experiences must be made more meaningful to the student through association with the world of work.

3. Greater must be made of student and direct work experiences in the junior high and senior high school programs.

4. Occupational exploration programs should be a systematic career development process, with experiences sequenced logically.

5. The occupational exploration program should be sufficiently flexible to accommodate the needs of all students.

6. A closer working relationship or linkage will need to be established between the school system and business and industry.

7. Teacher education should become sensitized to the occupational exploration and career development aspects of education and modify their programs to provide specific teacher preparation in this area.

8. The professional preparation of counselors needs to be revised to focus more sharply on the occupational aspects of guidance, possibly through the use of limited job experiences in the counselor preparation programs.

The paucity of research in occupational exploration leaves a wide array of areas needing additional research and study in the following priority areas:

1. The objectives of elementary world-of-work programs need to be fully identified and clearly defined.

2. Curriculum development is needed at all educational levels, with the greatest emphasis on elementary programs.

3. The responsibility of vocational education for elementary and junior high school occupational exploration programs must be clearly defined.

4. Alternative methods must be explored for financing programs after federal legislation and private foundations cease providing developmental funds.

5. Study is needed to determine whether all students should be involved in occupational exploration programs or whether these programs should be primarily for the handicapped and disadvantaged student.

6. Continued effort is needed in developing strategies for implementing and administering career development programs.

7. Guidance and testing packages on occupational exploration need to be developed for in-service teacher education.

8. Strategies and guidelines need to be developed for acquiring active community involvement in occupational exploration programs.

9. Evaluation techniques and procedures for occupational exploration programs need further development.

**TEACHER FACTS**

- The number of college graduates were qualified for teaching Vocational Agriculture last year. 1,700 graduates majoring in Vocational Agriculture were classified in 1,700 as compared to only 1,058 in 1963.
- Ohio led all other states in adding the largest number of new teaching positions last year with 3,850. They were followed by North Carolina and California, with 5,923 and 3,211.
- Texas led all states with the number of teachers in vocational agriculture.
- California's total was 1,182, while North Carolina's was 541, and Mississippi's was 392. The number of teachers in vocational agriculture in the United States was 37,829.
- The number of teachers in vocational agriculture was 35.2% of the teachers taught in multiple teacher departments.

**FFA ALUMNI ASSOCIATION**

- Membership in the FFA Alumni Association grew by $462 per year.
- This was to be a small amount to pay for membership in an organization that appears to have a great future.
- Send your dues to the National Alumni Association, care of Jay J. Benham, Executive Secretary, Box 13160, Alabama, Virginia 22939. Let's give this fine group a boost.
Jay Benham, a former FFA member himself, has been appointed as the first Administrative Secretary of the recently formed FFA Alumni Association. Until 1970 no provision was made for alumni membership of the FFA. At the National Convention held in Kansas City, Missouri last October members voted to change the constitution permitting the establishment of an alumni category of membership so former FFA members could continue to play an important role in the organization.

Jay graduated from The Ohio State University, had a distinguished record as a teacher of vocational agriculture at Oxford, Ohio and was named outstanding young teacher in his region by the NVATA. In his 3½ years at Oxford, the vocational agriculture department expanded from 30 students and one teacher to 150 students and four teachers and an adult program with over 300 enrolled. There are over 4 million former FFA members in the U.S. Benham is aiming for 15,000 members in the FFA Alumni Association for the first year of operation.

### The National Future Farmer
Vol. 19, No. 2

Trained men with ideas coupled with the tools with which to work is the formula for uncovering the answers to the questions and solutions to problems.

—The Empire State Mason

The rate of on-the-job injuries is rising — pointing to the need for improvement in workplace environment. The rate of disabling work-related injuries in American industry has increased more than 20 per cent since 1958 causing a loss of productive man-days that is 5 times the number lost from strikes. In both human and economic terms the current occupational safety and health scene needs improvement. About 14,000 persons are killed annually as a result of industrial accidents. Over two million are disabled each year. Two hundred fifty million man-days are lost each year because of work-connected disability.

U.S. Dept. of Labor — U.S. Manpower in the 1970’s

Taiwan had an economic growth of 8 per cent last year. Taiwan economy has five main aspects: expanding industrialization, deceleration of agricultural growth, more dependence on exports, a shortage of technicians and managers, and retail price inflation.

—Minister of Economics Sun Yun-Suan

Duane R. Lund was recently appointed to the National Advisory Council on Vocational Education. He received his B.A. degree from Macalester College, St. Paul, Minnesota and his M.A. and Ph.D. from University of Minnesota. He has been a teacher, counselor, high school principal and is now superintendent of schools in Staples, Minnesota. He was Executive Secretary for U.S. Senator Edward J. Thye from 1955 through 1958.

His accomplishments, offices and honors include:

- Member, Governor’s Advisory Committee on School Finance, 1960
- Chairman, Minnesota Manpower Advisory Committee, 1961
- Member of Study Team of Education in Western Europe, 1963
- Vocational Education Consultant to the District Committee of the U.S. House of Representatives, 1965-7
- Member, Title I Advisory Committee to Minnesota State Department of Education, 1966-8
- Vice president, Minnesota Association of Vocational Schools, 1966-70
- Member and first Chairman, Minnesota Professional Teaching Practices Commission, 1967-present
- Member, Advisory Committee to Minnesota State Department of Education for all Federal Education Programs, 1968-present
- Member, Minnesota State Advisory Council for Vocational Education, 1969-present
- Member, Board of Trustees of Upper Midwest Regional Education Laboratory, 1959-present
- Member, State “Education for the 70’s Commission,” 1970
- Delegate to White House Conference on Education of the Disadvantaged Child Past President, Central Minnesota Education Association and Member of State MEA Board of Directors

Research people in the field of memory transfer believe that chemical procedures capable of increasing man’s intelligence will be available within 10 years.

—Report on Education Research
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