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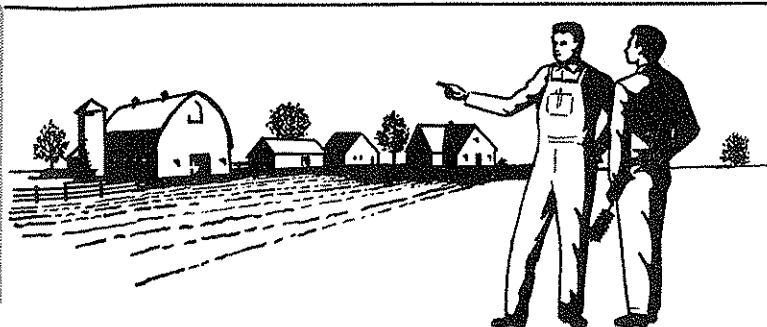
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*Featuring—***Making Vo-Ag
Broader Vocationally**

The Agricultural Education Magazine



A monthly magazine for teachers of agriculture. Managed by an editorial board chosen by the Agricultural Section of the American Vocational Association and published at cost by Interstate Printers and Publishers, Danville, Illinois.

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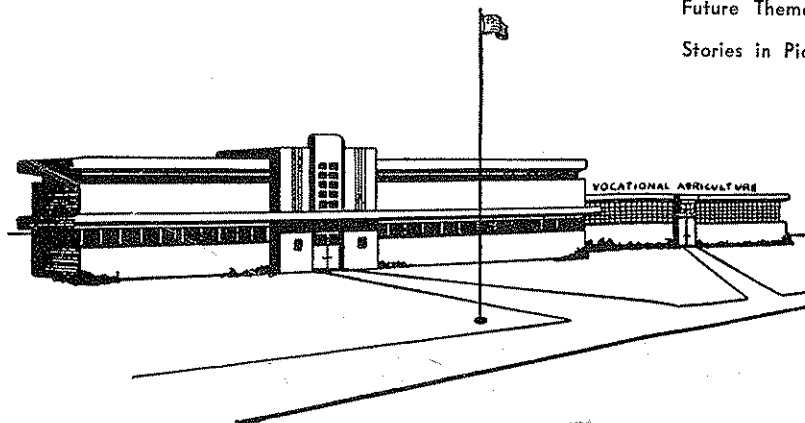
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But What Is Vocational?

C. C. SCARBOROUGH, Teacher Education
North Carolina

Everyone, nearly, agrees that vocational agriculture should be vocational. But, what is "vocational" for a 14-year-old boy entering the ninth grade? I am suggesting that one of the major problems in vocational agriculture today is the lack of understanding of this question and the problems involved in trying to answer it. The purpose of this article is to defend this view and to suggest a possible approach to answering the question of what is vocational for a teenager.

First, we need to think in terms of vocational development rather than in terms of occupational choice. The following definition will indicate the reason for this preference:

The term *vocational development* is used to denote the process of growth and learning which underlies the sequence of vocational behavior. It thus includes the more common concept of occupational choice, but avoids the pitfall of suggesting that choosing an occupation is an event occurring at a point in time. It includes also the concept of vocational adjustment, but by comprehending both of these concepts it avoids the misleading implication that they are separate and distinct. The developmental nature of vocational orientation, choice, entry, adjustment, and retirement calls for a broad term which puts the emphasis on process over a period of time.¹

It is clear that choice of occupations does not take place in the 8th or 9th grade or at any other one time. The view of gradual, continuous, vocational development is supported by much research.

In a similar manner, there is overwhelming support for the view that the 14-year-old does not have the vocational maturity to make a definite choice of his life's work. Of course, he will and should be giving serious thought to this problem. But these choices, from about 11 to 17 years of age, are at best only *tentative*. One recent, large study in this area was done by Super, Overstreet, and others and reported in *Vocational Maturity of Ninth Grade Boys*, the second in the Career Pattern series cited earlier.

What does this mean when applied to vocational agriculture? If the research and recommendations

¹Donald Super and others. *Vocational Development—A Framework for Research*. Career Pattern Study I. New York: Bureau of Publications, Teachers College, Columbia University, 1957.

From the Editor's Desk

The guest editorial appearing below was not written for use as an editorial. However, Mr. Holtan's article said so well the things that the editor had in mind to say that the article has been placed in the space usually occupied by the editor.

Agriculture Is More Than Production Farming

CARLYLE HOLTAN, Vo-Ag Instructor,
Oconomowoc, Wisconsin

Agriculture is much more than production farming. Through a study of agriculture, occupational opportunities are made available in: Production Farming, Agricultural Technology, Farm Service, Agricultural Science, Sales Work, Agricultural Communications, Agricultural Businesses, and Agricultural Professions.

Agriculture is a science, a business, a profession, and an industry. The field of agriculture provides more jobs in cities than on the farm. While boys who grow up on the farm feel there are limited opportunities in agriculture, the following information indicates the tremendous opportunities today.

The above statements are excerpts from a brochure I recently prepared about Vocational Agriculture for distribution to prospective students, parents, community leaders, grade and high school students. The objectives of this brochure were to present the philosophy and curriculum of our local vocational agriculture program. Being located near a metropolitan area, the emphasis placed on agriculture is much less than in rural areas. Many small farm operators have found it difficult to make ends meet and turn to the city for employment. Some feel agriculture does not offer a future since they think of agriculture only as farming. These individuals, their children, as well as other people with interests in agriculture need to be educated to the vast field of opportunities available as mentioned previously.

This does not mean that vocational agriculture should provide the training required by related occupations. The tractor mechanic, artificial inseminator, forest worker, buttermaker, feed and seed salesman along with many others are illustrations of occupations needing a good agricultural background and further related job training. Vocational agriculture should be the "core" of the curriculum for these individuals, with the instructor in agriculture and agricultural education supervisors providing the leadership to make this program effective. A realistic instructional program will incorporate the sound background train-

But What Is—

from guidance have any application to vocational agriculture, these conclusions would seem to be valid:

1. The choice of farming, or any other occupation, by anyone below 18 years of age, is and should be tentative. Therefore, to attempt to enroll only those planning to farm in high school vocational agriculture is not sound vocational guidance.
2. The supervised practice aspect of vocational agriculture, if made an integral part of the learning situation, should contribute materially to the vocational development for all those enrolled.
3. The school should assume some responsibility in providing opportunity (necessity) for practice. It is too much to expect all 14-year-olds who have an interest and can profit by vocational agriculture to supply their own farms. (This is not a new idea. See Smith-Hughes Act, Sec. 10.)
4. A broader and more realistic view of what is vocational for a teenager would result in less emphasis on what the youngster may be doing 20 years hence, and more emphasis on what the youngster may be doing 20 years hence, and more emphasis on the *now*. Whether vocational agriculture is vocational for any student can now be tested.

The key question would be, "Is he intelligently learning to do by doing in agriculture appropriate to the 60's?"

Finally, it should be noted again that occupational choice is only a part of vocational development and not some act apart. In fact, if some order of events must be indicated, the choice of life's work in an agricultural field would *follow* vocational agriculture, not precede the high school course. That is why I see vocational agriculture as the gateway to the many agricultural occupations and professions. However, it will be a dead end street rather than a gateway unless we have dynamic programs to challenge the alert teenager of today. □

Agriculture Is—

ing of agricultural sciences with proper guidance techniques to acquaint individuals with these opportunities.

The development and use of soil science, fertilizers, nutrition, antibiotics, tranquilizers, new chemical sprays and dusts, hybrid varieties, crossbreeding, artificial insemination and application of electronics are a few of the modern advancements that must be understood today. Students receiving this training, along with the supporting science and other academic courses, will retain their interest in agriculture and at the same time acquire a background for further college training, if so desired. *Statistics from colleges prove clearly that vo-*

cational agriculture students do equally well academically in comparison to non-vocational agriculture students in college and they also show superior qualities of leadership as a result of their high school training. Students with strong academic ability should be encouraged to meet college entrance requirements and they should be informed that this can be done while including vocational agriculture in their program. By working closely with the high school principal, guidance director and curriculum coordinator, a student's program can be adjusted to include these requirements. We must attempt to keep our share of outstanding students in agriculture.

A great deal of the progress in vocational agriculture rests on the instructor. Training for production farming alone is not the answer. Educational opportunities for students who are interested in agriculture and who need farm training and experience regardless of whether or not they plan to farm must be considered. We must think ahead—to include the vast scope of the field of agriculture, production farming, service, sales, communications, business and professions.

Vocational agriculture must not only provide experiences and training in production agriculture but must implement this with many other agricultural opportunities. □

The Agricultural Metamorphosis Affects Vo-Ag Education

DALE BROWN, Vo-Ag Teacher, Mexia, Texas

The druggist said, "I drove out through Lost Prairie the other day and I saw four abandoned homes. When I was a kid these homes were all occupied by good farmers. Agriculture is dying." Agriculture teachers and others in many places have heard statements like this made numerous times in recent year. The errors in

the reasoning of people who make statements like this is that they have mistaken the symptoms of change for the symptoms of death. And they think that agriculture and farming are synonymous words. Of course, those who are conversant with the subject know that farming is only one segment of agriculture. They also know that

agriculture is not dying. They are aware that it is rapidly changing.

These changes that are now going on in agriculture should affect our program offerings. We should study these changes and adapt our programs to meet the needs of a new era. In order to get some factual information which would help me in

revising the program here in Mexia, I made a survey of all of the students who have completed three years of Vocational Agriculture in this school during the decade—1951-60. I found out where these boys lived and I learned what they were doing. I determined whether they went to college and what they studied. This is what I learned about the 102 boys who have completed the Agriculture course during the ten years that I have taught here. Most of these young men are from seventeen to twenty-seven years of age. Fifty-two of them were either in school or the military service. The remaining fifty worked in many different jobs which, for the sake of brevity, I have grouped as follows:

In Agricultural occupations—9.

In occupations which training in Vocational Agriculture provided directly related instruction—27.

In occupations which have a remote relationship to Vo-Ag Instruction—14.

A summary of the educational achievements above the high school level revealed that fifty of the one hundred and two students involved had attended or were attending college. I learned that 15 former students were enrolled in college studying agriculture and that 10 had graduated with agriculture majors. Four had started a study of agriculture in college and dropped out. This made a total of twenty-nine who were studying or had studied agriculture in college. Twenty-one of these former students were attending or had attended college to study subjects other than agriculture.

This study seems to conform to the findings of more comprehensive studies which have been made in recent years. And they provide some indications to guide us in planning the future of Vocational Agricultural Education. One indication is that only a small percentage of our students will become farmers and ranchers. It seems that increasing numbers of high school agriculture students will attend college. And it is safe to predict that many high school agriculture graduates will work in jobs closely related to farming and ranching. A look at the trends should help us to provide a program that will meet the needs of more of these students.

In the beginning Vocational Agriculture in the high school was designed for boys who expected to farm and ranch. Today it should be de-

signed for boys who will work in agriculture. These workers in agriculture can be divided into three main groups.

First, we should continue to train boys who expect to become farmers and ranchers. We have the most efficient and productive agriculture in the world. Without education in agriculture this progress would not have been possible. We need to continue the educational programs to insure continued leadership in agri-

culture for it influences our security and our effectiveness in the world. The American farmer must be ready to feed and clothe 225 million people by 1975. He has a big job to do. Vo-Ag departments in the high schools have an important role to play in helping to prepare him.

Secondly, we should help prepare boys for college training in agriculture. Most of these boys will not farm. They will work in jobs related to

AT THE CROSSROAD

Whenever I reach a crossroad,
I have a choice of three—
To right, to left, or straight ahead,
Whichever bests suits me.
When one is on a routine trip
And knows full well his goal,
It's on the smooth and straightaway
He wants his wheels to roll.
But when a curious youth explores,
And nowhere 'specially bound,
Each crossroad means another path
To learn his way around.

When World War I was raging wild
And flags of hate unfurled,
We took upon ourselves the task
To feed a tortured world.
Our farmers needed special help
To change beliefs and ways,
Which they and dads before them used
In less exacting days.
The science gleaned by research men
Was snatched from dust clad shelves,
And thus a breakthrough crossroad made
To goals we'd set ourselves.

Yes, times have changed since Smith and Hughes
Brought forth their famous plan,
And farming is no longer all
That draws the agriman.
The turnpike still is there for those
Who farm or plan to farm,
The crossroad to the right combines
The land with business charm.
The left leads to employment, where
A rural start has worth,
While each provides a feel of work,
For his spot on this earth.

Thus Smith and Hughes met their crossroad
In times prevailing then.
If we do less, all well may pray,
"Lord, send more able men."

A. J. Paulus, Tennessee
4-25-61



Right Answer-Wrong Question?

H. M. HAMLIN, Teacher Education, Illinois

A recent publication widely circulated among agricultural educators reveals, like a flash of lightning in a dark night, assumptions that underly much that is undertaken in agricultural education.

Herbert F. Lionberger's *Adoption of New Ideas and Practices*, a product of the National Project in Agricultural Communications published by the Iowa State University Press, is a masterly summary and interpretation of research on the subject.

The book seems to assume that the adoption of new ideas and practices is intrinsically good. I have no objection to research that starts with this assumption if no one is led to believe that the assumption is a fact. If an educator starts with this assumption, he is a lost soul.

Proceeding from the assumption, Lionberger tells us what research has to say about marketing a product (a new idea or practice), using the best modern techniques of market analysis, advertising, and promotion, but he tells us nothing about education.

The same kind of thinking was revealed in a publication of the U. S. Department of Agriculture called "Agriculture's Human Resources" to which I paid my respects in the May, 1956, issue of the *Agricultural Education Magazine*. My retort then was that people have agricultural resources, but agriculture has no human resources.

My comment now is that people need education to prepare them to decide whether to adopt new ideas and practices and to assist in using them if they choose to use them, but that adopting them is not a self-justifying end in itself.

The basic difficulty in both cases is that human beings are regarded as tools to be manipulated in reaching ulterior goals.

I am concerned about the extent to which "communication" is being substituted for "education" in the language and thinking of many leaders in agricultural education. There is a vast difference between them. In

the opening paragraph of the Lionberger book the author seems to equate "communication," "education," "influence," and "perpetuating and extending . . . beliefs." Another word that belongs in his mixed-up constellation is "propaganda."

The confusion that results from wrong objectives becomes apparent when ways and means of attaining objectives are chosen and when evaluation of outcomes takes place.

If the purpose is to get a new idea or practice accepted, it becomes acceptable to work with only a few key "influentials," hoping that the "masses" will adopt them uncritically as they trickle down from above. The only question is whether this is an effective way of getting adoption. The studies reported indicate that the procedure does not always work well; its ineffectiveness is apparently seen as its only objectionable feature. Community attitudes and values, set by these same "masses" sometimes get in the way of the acceptance of the ideas and practices introduced by the "influentials" and the "innovators." These have to be changed, it seems, so that the highest of all values can be attained (the adoption of new agricultural ideas and practices) although admittedly some of these attitudes and values are derivatives of religion, which has been the inspiration of our highest values.

One kind of related research should not be overlooked: the research which tends to show that only the early users of good new ideas and practices profit from their use and that most of the advantages from their introduction accrue to the consumers. This situation is not necessarily bad, because consumers have footed most of the bills for the agricultural research which resulted in the new practices. It can hardly be ignored in considering whether securing their adoption is the first concern of an agency of agricultural education or in farmers' decisions as to whether the use of new ideas and practices should

have the highest priority in their scale of values. It leads also to the question as to whether "agricultural education" leading to adoption of new practices has been benefiting the innovators of new practices while it has been of questionable value to farmers generally.

Using adoption of new ideas and practices as a criterion, agricultural educators are thrown completely off the track when it comes to evaluation of their efforts. Adoption may be one of many signs that an individual is becoming educated; failure to adopt them, for good reasons, may be a better sign.

The Lionberger book can be read with profit by all agricultural educators provided it does not take them completely out of orbit and lead them to forget that they are educators concerned with growth and change in people, which is directed toward more intelligent human behavior and more meaningful social ends. If the book leads them to prostitute people and human values to practices, they had better never have seen it. □

The Cover Picture

The beef cattle industry in Alabama has grown by leaps and bounds during recent years. Abundant year-round grazing plus a temperate climate have contributed to the growth. However, not least among the reasons for the rapid growth is the interest in cattle production by FFA members.

The cover picture shows a member of the Geneva, Alabama, Chapter fitting a beef calf for showing. County, district, state, and regional livestock shows have been good interest builders for the vocational agriculture students. A great deal of teaching can be done by taking advantage of the interest boys have in selecting, fitting, showing, and managing beef animals. □

A Statewide Guidance Program For

Careers In
Agriculture

M. C. KNOX, Supervisor, Washington

Declining enrollments in our high school vocational agriculture programs and in the colleges of Agriculture should be a matter of national concern. The rapid increase in world and national population means that we will need more food and fiber in the years ahead and it will take skilled manpower to produce, process and distribute it.

Appreciating the importance of these problems, we in the State of Washington embarked upon a program two years ago designed to interest young people in agricultural careers and to inform the public in general of the importance of agriculture and the need for well-trained people in its working force. Our research in the area of businesses closely related to agriculture and the findings of the special committee of the Association of Land Grant Colleges convinced us that there are many, and there will be more, fine career opportunities in the entire field of agriculture. Our definition of the "entire field of agriculture" includes all of those occupations, both on-farm and off-farm, for which farm experience and education in agriculture is either required or highly advantageous. We have accepted this definition from Dr. Harold L. Byram's book, *Guidance in Agricultural Education*. Because of this belief, we feel that it is an obligation of the vocational agriculture instructor to inform people in general, and his students in particular, of these career opportunities. In helping the teacher meet this obligation, we have prepared and assembled materials on agricultural occupations and made them available to our teachers for their use.

The materials we have prepared to assist teachers are as follows:

1. Vocational Agriculture Instruction—What It Is, Where It Leads, Its Relationship to Other Types of Instruction. The title is self-explanatory. Through articles on agricultural change, relationship of vocational agriculture to college training, applied science, farming and closely allied

areas, it brings out how instruction in vocational agriculture and on-farm experience may lead to a career in the total field of agriculture.

2. Newspaper articles on vocational agriculture. This is a packet of articles which a teacher can adapt and use locally. It takes up much of the material from the first publication and also emphasizes the adult phases of vocational agriculture.

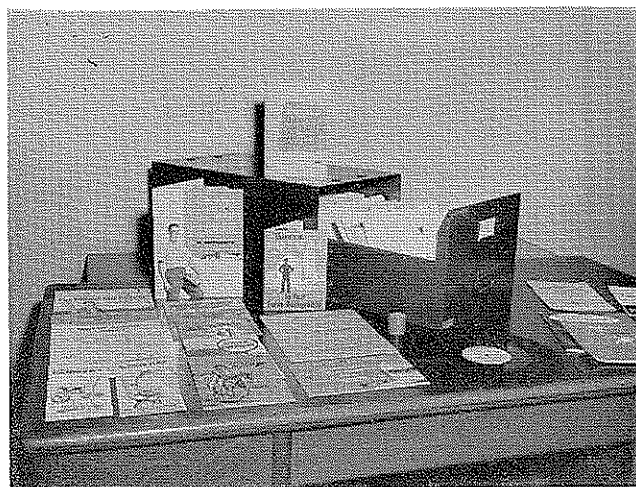
3. Agricultural Occupations Information. This is a very extensive bibliography of books, bulletins, brochures and visual aids pertaining to the many career fields in agriculture.

4. Instructional Guides for Career Guidance in Agricultural Education. This is a guide for teachers who wish to include a unit of instruction on agricultural careers in their vocational agricultural curriculum. It also includes an inventory of the printed material which we feel is of greatest value to a teacher and which is included in our lending libraries.

5. *You Can Take It With You*. This is a two-color poster showing how a boy's interest in a particular area of study—science, communications, etc.—can lead to a particular career or group of careers in agriculture.

The balance of the materials which we have placed in the hands of teachers was secured from other sources—commercial publishers, government agencies, etc. This involves much searching, reading and evaluating. There is much improvement to be desired in publications relating to specific off-farm agricultural occupations. There is a wealth of materials regarding production agricultural occupations and also for careers that require agricultural college graduation.

There is little point in giving a teacher an idea or an aid unless he is ready to receive and use it. We, as supervisors, worked for two years at summer conferences, area meetings



Six of these lending libraries are available to vocational agriculture teachers in Washington for two week periods.

and school calls informing teachers as to the changing conditions which are making agriculture and the people in it more important than ever. We also carried out research programs on the need for agriculturally trained men in agricultural businesses and as to how well vocational agriculture contributed to the acquisition of science concepts. This message is told over and over in our own publications. Then, starting last winter, each supervisor prepared a folder of agricultural guidance material to take with him when calling upon school people. He also had some free materials to leave with the principal, counselor and agricultural teacher. The response was gratifying, especially that of the agricultural teachers. They saw the need for instruction and guidance in agricultural careers and welcomed any assistance. Many ordered materials from the bibliography. These contacts also provided a reason to get the vocational agriculture teacher in touch with counsellors and other teachers.

Our next step was to prepare six lending libraries containing, in sufficient quantities for classroom teaching, the publications which we thought were the best available on agricultural occupations. The inventory of these, as was said before, is in our instructional guide. The cost for materials in each library was \$21. Each library was put in a single drawer file obtained from surplus. We also made available two copies of the Coronet film, "Careers in Agriculture."

Each supervisor has one of these files and can lend it to a school for a two-week period. The demand for this material has been overwhelming.

As of now, forty-three vocational agriculture departments have used these libraries for two-week periods each. They are scheduled for use in thirty more departments during the remainder of this school year. Thirty-one schools reported that a Careers in Agriculture unit, using the lending library and film, has been given to 1,260 students for a total of 7,347 student hours.

We are attempting to evaluate the materials in the libraries, their use and the follow-up in each school. Teachers using the library are asked to report on a sheet provided for

that purpose. Every one of the reports indicated that the local agriculture department and high school is acquiring agricultural guidance material for its own library. We hope that within two years our lending libraries will no longer be needed.

Our follow-up program for this year is to have each supervisor supplied with the poster "You Can Take It With You," and to get these on the school bulletin boards where they will do the most good. It will also serve as an entree for a return call on the counsellor or other school official who handles high school registrations.

We feel that our efforts so far have been successful and worthwhile. Our plans are to continue stress on this area, keep up our contacts with school counsellors and possibly prepare more materials, especially for those agricultural occupations that are non-farm and do not require college training. While we have gained this objective, we may never be able to measure our success in our major objective—that of getting a larger number of able young men to remain in some field of agricultural endeavor. We hope for the best. □

The Vocational Education Courses Which Rural Boys Want

By THEODORE P. SWINGLE, Vo-Ag Instructor, West Salem, Ohio, and
RALPH J. WOODIN, Teacher Education, Ohio

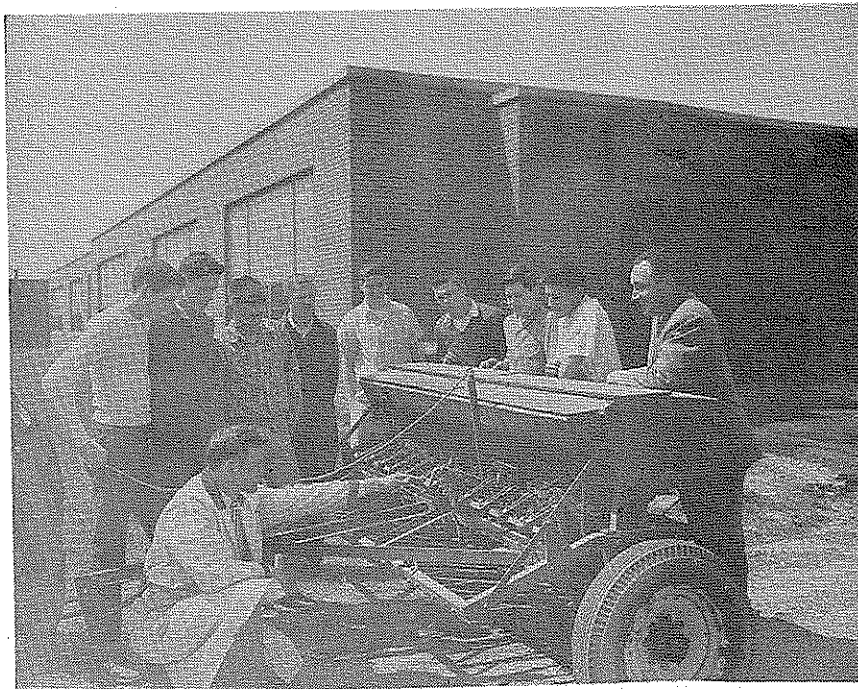
The need for vocational education courses in rural high schools which train for a wide variety of occupations has been recognized by many educational leaders. Vocational agriculture teachers, themselves, in many cases realize that additional opportunities for vocational education would be

beneficial for some of the students now in their classes. This raises the question—what vocational education courses would boys in rural high schools take if they were available? While the answer to this question cannot be used as the only basis for expanding vocational education offerings

in rural high schools, it certainly provides vital and useful information for future curricula developments.

A study of the vocational education choices of rural high school students in an entire Ohio county was completed last year.¹ This study provides some interesting answers to the above question and supplements a similar study of Marion County boys made by Cornett.²

This study was made in Wayne County which is located in Northeastern Ohio, and is probably typical of many rural counties which have achieved a balance between industry and agriculture. Wayne County has an important agricultural industry as well as many employment opportunities in other fields. In agricultural income, it is third highest in Ohio and it is the leading county in the state income received in dairying. Like



Vocational agriculture classes are only one of the types of vocational education which rural boys want according to this study.

¹Swingle, Theodore P., *Vocational Choices of Wayne County Sophomores and Junior Boys in 1960*. Unpublished Master's Thesis, Ohio State University, 1960.

²Cornett, Dallas L., *Vocational Training Choices of Sophomore and Junior Boys in Marion County Rural Schools*. Unpublished Master's Thesis, Ohio State University, 1957.

many an agricultural county, it has a striving county seat in the City of Wooster whose population was 14,005 according to the 1960 Census. The total county population of 29,399 indicates a nearly even distribution of population between the City of Wooster and the balance of the county. The male labor force of the county totals 16,395 of which 3,894 or nearly 25 percent were employed in agriculture.

Outside the City of Wooster, the county is served by seven rural high schools. All except one has offered vocational agriculture for several years. In making the study, 512 sophomore boys enrolled in the seven schools were surveyed as to their choices of vocational education courses. The questionnaire used to secure the student choices was designed by the Ohio Guidance Services, and not only secured the students' choices of vocational courses but also determined whether the choices were consistent with the students' understanding of a vocation. For example, a student who had a "consistent choice" for auto mechanics would have also indicated that he had a good understanding of the occupation as a reward and its demands of the worker.

The major findings of the study were as follows:

1. A wider variety of vocational education courses were desired by these rural boys. Eighty-three percent of the respondents said that they would take one or more vocational courses if they were available in their high schools.

2. Many boys who plan to attend college later would also like to schedule vocational education courses. A total of 22 percent of those choosing vocational courses said they would plan to attend college later.

3. A substantial number of boys would continue to take vocational agriculture even though other vocational courses were available. Approximately 24 percent of the boys said that vocational agriculture would be their first choice in a vocational course.

4. A great majority of these students would prefer courses in trade and industrial education. Sixty-seven percent of the students' first choices were in the area of trade and industrial education including auto mechanics, radio and television, carpentry, drafting, machine shop, bricklaying, welding, and the electrical trades.

5. A great many of these students apparently expect to combine work-

ing in agriculture and industry through part-time farming. This is indicated by the fact that many boys who chose agriculture as their first choice had a second choice in the field of trade and industrial education and many who chose trade and industrial education as their first choice, chose agriculture as their second choice. This preference for part-time farming is also indicated by the fact that 82 percent of the respondents said that they wished to live on a farm or small acreage in the country within five years after graduation.

6. The student's choices of vocational education courses were not closely correlated with employment opportunities in the country. For example, more than 1/3 of all boys chose auto mechanics as a first vocational choice, yet the demand for auto mechanics in the county is well met at the present time, while there are serious shortages for certain skilled factory workers.

7. Boys who grow up on farms are more likely to take vocational agriculture than others. Nearly 50 percent of the farm boys desired to follow in their father's occupational footsteps; however, only 21 percent of all students desired to follow the same occupation as their fathers. □

Analysis of the Scientific Content in Curriculums of Vocational Agriculture¹

AROL HUDSON, Vo-Ag Instructor, Vernon, Florida

The purposes of this study were to analyze the scientific content of curriculums in vocational agriculture, and to identify the areas that require a scientific background and the use of the scientific method.

The field of agriculture has advanced to the extent that today's farmer must be a scientist if he is to compete successfully. In spite, however, of the rather general recognition

by educators of the scientific methods used in farming and related fields and the necessity of scientific training in all areas of agriculture, vocational agriculture is not being considered as a course in science by some educators.

Data for the study were secured from the vocational agriculture subject matter specialist for Alabama, and curriculums in vocational agriculture. Textbooks in the areas of crops, livestock, farm mechanics, general science, biology, and chemistry were also used as a source of information.

The study showed that 87 per cent of the content of a four-year program of instruction in vocational agriculture

was scientific information. The total program of instruction required a scientific background if the students were to enjoy successful participation in the course work. The following areas were found to require the greatest scientific background:

1. **Soils**—The study of soils was found to be a complex science involving many other sciences such as chemistry, physics and mathematics. The student needed to know the parts of soil and the role each part played in plant production.

2. **Fertilizer**—The fertilizer and fertilization practices were found to be very complex in the production process. The student needed to know



¹Based on a study by Arol Hudson, "Analysis of the Scientific Content in Curriculums of Vocational Agriculture," Special Problem, Master of Education, Auburn, Alabama: Library, Auburn University, 1961, 34 p.

the role played by each chemical in the fertilizer and how they reacted to each other.

3. **Seed**—It was found that students needed to know how seeds were produced, their content and the part they play in plant production.

4. **Plants**—The science and business of agriculture was found to be centered around the growing of plants. The information gathered emphasized the necessity of students understanding how plants grow before they could grow plants efficiently.

5. **Livestock**—An understanding of reproduction and how the breeding program could improve the quality was of great value in livestock production. When the body constituents, their function and the per cent each constituent was of the total body, were known the production process was more efficient.

6. **Diseases and their control**—Diseases of plants and animals and their control were found to be an important and complex part of agriculture production. An understanding of how plant and animal diseases are transmitted, how they attack both, and the damages they cause were necessary before the student could prevent or control them.

7. **Insects and their control**—Insects and their control were found to be an important part of crop and livestock production. The student needed to know how to identify insects, and how to classify them according to their feeding habits in order to select the correct insecticide for their control.

8. **Farm mechanics**—Farm mechanics was found to require a scientific background in many areas, and especially when the students were working with the principles of electricity, engines, concrete, and paint. Soldering and welding were also found to require a scientific knowledge of the composition of all materials used and the process in doing the job.

Possibilities for using the scientific method in teaching vocational agriculture were found to be numerous. The following demonstrations were among those found to be valuable in the teaching process:

1. Farm mechanics

a. The principles of the lever, chain hoist, gas engines, and the expansion and contraction of metals.

b. Demonstrate the principles of an electric motor and the measurement of electrical current.

c. Show how an electric circuit is formed.

2. Crop production

a. Conduct germination tests to determine the quality of seed, and show the process of germination.

b. Use pot plants to show how roots respond to gravity.

c. Use pot plants to show how water will cause roots to defy gravity.

d. Use pot plants to show the necessity of sunlight for photosynthesis.

e. Demonstrate self-fertilization, and cross-fertilization by using corn plants.

f. Show how hybrid seed are produced by using corn plants.

g. Use wilted plants and colored water to show how plants get water and soluble nutrients from the soil.

3. Insects and chemicals

a. Collect insects of various types and use different insecticides on them to demonstrate the effectiveness and ineffectiveness of the insecticides on different types of insects.

b. Use chemical weed killers on different types of plants to show some plants will survive the use of one chemical and will be killed by another.

4. Soils and fertilizer

a. Use different types of plants in boxes of soil, and apply complete and incomplete fertilizers to show the value of the various nutrients.

b. Omit essential elements from fertilizers to show the deficiency symptoms.

c. Use various types of soils and equal amounts of water to demonstrate the water holding capacity of different type soils. This demonstration can also be used to show how the leaching of fertilizer takes place.

5. Livestock and feeds

a. Use animals and different feeds to show the value of the different feeds. Omit essential nutrients from the rations to show how the animal reacts and to show the deficiency symptoms in the animals.

b. Use like animals but of different age and feed them the same ration to show how nutritional requirements change with age.

The study showed that a great majority of the vocational agriculture curriculum was scientific and required a scientific background for effective learning. The areas of soils, fertilizers, seeds, plants, feeds, feeding practices, livestock, diseases, insects and farm mechanics were identified as requiring a scientific background if the student was to have successful par-

ticipation in the course work. The study also identified demonstrations that could be used in each of the above problem areas to implement the use of the scientific method in the teaching of vocational agriculture. □

The Agricultural Metamorphosis—

farming. With the advances in science and technology, agriculture has become much more complex and there is an increasing need for highly trained people. The land grant colleges report that there are jobs for 15 thousand college graduates each year in the field of agriculture. They are needed in research, education, conservation, communications, engineering, agricultural services and many other areas of agriculture.

And third, we should help train boys who terminate their formal education with high school and work at jobs in agriculture. According to a Texas Agricultural Extension Service publication "An Inside Look at Texas' Agricultural Industry" in 1958 eleven percent of all jobs in Texas were in agricultural services and eighteen percent of all jobs were in processing and distribution of farm products. The modern farm and ranch has a tremendous appetite for feed, seed, fertilizer, insecticides, fuel, machinery and many other kinds of supplies and equipment. And many people are required to service the farmer. It also requires a vast army of workers to process the food, feed, and fiber from the farms and get it to the consumer in the form that is desired.

At the same time we work with boys in these three groups we can provide valuable training for others who will go into business or professional work and later become landowners. A look at any community will show that many business and professional men become landowners through purchases and inheritances. Studies in Vocational Agriculture should help them to manage the land so that it receives the proper care and so that they will get a more profitable return on their investment.

Our programs of Agricultural Education should continue to make adjustments to meet the needs of agriculture. An important and challenging job is before us as we strengthen our nation by building better programs of Vocational Agriculture. □

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Cooperating With School Counselors in the Guidance of Rural Youth

HAROLD M. BYRAM, Teacher Education, Michigan



Teachers of agriculture are engaging in an increasing variety of guidance activities. The values they have placed on these activities have also varied greatly. Mixed feelings have been expressed regarding relations with school counselors. These specially-designated, school guidance functionaries sometimes have been spoken of with praise for the help they have given to youth. Mention is made of their help to youth in understanding their own potentialities and interests, or in overcoming obstacles and handicaps to their success in school. Quite often, however, teachers of agriculture have complained of counselors' lack of background and understanding of the scope of opportunities in, and importance of agriculture, and of the purposes of vocational agriculture.

The reserved attitude of some teachers toward counselors can be explained in part by related circumstances. One of these is that a counselor may be, relatively, a newcomer to the school. (We are using the title of counselor here to refer to any local school staff member who has been given primary responsibility for guidance.) Until recently the majority of high schools maintaining vocational agriculture had no designated counselors. After George-Barden funds became available for institutional programs of counselor training the number of well prepared guidance personnel increased, but not much faster than growth of high school enrollments. The subsidized workshops stimulated by funds under the National Defense Education Act, Title V since 1958, however, have helped greatly to increase the numbers. Thus, working with school counselors has only recently been possible for most teachers of vocational agriculture. Teachers have not been working with counselors long enough to have developed well-defined practices of cooperation.

A few counselors have been drawn from the ranks of former teachers

of agriculture. For the most part, however, they have come from other subject specializations. These have included social studies, physical education, and other general education areas. Unfortunately, not all those designated as counselors have received special training for their work.

Funds for school operation have been limited. As a result the

number of counselors which many schools could afford has not kept pace with the growing need. The load of students per counselor in too many cases has been too heavy. This has made it difficult for some counselors to do much more than to give tests, assemble records, and deal with a limited number of "problem" cases. They have frequently been given only part time for their work, and this has made it difficult for them to do much counseling. Teachers need to understand some of these conditions and to appreciate the work which counselors are doing or can do. It is important, too, that a teacher of agriculture understand his own role in guidance. The teacher of agriculture has responsibility for helping students to make choices regarding enrollment and continuance in vocational agriculture and to be satisfactorily placed and advance in agricultural occupations. He has a large responsibility in relating instruction to occupational and educational plans.

The teacher's role is also one that includes cooperation with school staff. It would be unfortunate, indeed, if he were to assume a possessive attitude toward those enrolled in his



Carl Hall, left, a new teacher of vocational agriculture in Williamston, Michigan, confers with John Stanfield, counselor, concerning a student's record in order to be more effective in working with the student in school and on the farm.

classes, or toward prospective enrollees. Rather, the guidance of youth enrolled in vocational agriculture should be shared by the teacher, the counselor, the principal, and other teachers.

Teachers of vocational agriculture have much to gain by working closely with school counselors. One outcome is information about tests and their interpretation. In this connection, counselors can help to provide depth to a teacher's understanding of pupils—particularly those who present problems—that enables him to be more effective in class and individual instruction. Counselors often can give suggestions on techniques of working informally with students and parents. Teachers of vocational agriculture, on the other hand, are in a strategic position to aid counselors greatly in joint efforts to give vocational guidance to youth.

It is not always easy to give the help which counselors need so they may gain a better understanding of opportunities in agriculture and the relation of farm background and instruction in agriculture to these. The good counselor looks at his role in an objective manner. He tries not

to appear to give greater prominence to one occupational field than to another. But he is subjected to many influences, as we all know. Many counselors do not have an experiential background in agriculture. Their training may not have included information about agricultural careers. The counselor may mistakenly think he is revealing a lack of professional competency if he asks a teacher for occupational information. Certain it is, however, that he cannot counsel beyond his own knowledge.

How, then, can teachers cooperate with school counselors? To begin with we would, of course, recommend that the teacher enlarge upon his background by taking one or more courses in guidance. It might be observed here that most pre-service programs have been somewhat lacking in their emphasis on principles and practices of guidance. But a fuller understanding of the nature and purposes of a complete school guidance program is necessary for one who is to work with those who have responsibilities in such a program.

One of the greater tasks a guidance worker has is that of becoming aware of the veritable mountain of available information on occupations. He may not be aware of many of the publications and visual materials relating to occupations in agriculture, especially if his image of agriculture as an occupational field has been narrow. A counselor often is hard put to find time to read all occupational materials coming to the school. A teacher can and should offer his information services not only to the counselor himself, but also as a person to whom could be referred junior high school youth and those not enrolled in his classes, but who are seeking information about the broad occupational field of agriculture.

Many schools either conduct or cooperate with other schools to conduct career days or career conferences. These tend to involve many students and resource persons, as well as school time. There is a need to make these events genuinely helpful to rural youth. Teachers can help to plan and organize such conferences. They should accept responsibility for suggesting resource persons or speakers from occupations of an agricultural nature.

Another service a teacher should render is to report the placements of former students. Nothing takes on significance for youth quite so much as the accomplishments and occupational record of graduates. A well-conducted survey of occupations of an agricultural nature entered by former students of the school should be made and the results interpreted to counselors and to all interested youth. Likewise, new or expanding opportunities in the field should be reported.

While cooperation in the information service of the guidance program is important for a teacher of vocational agriculture, of equal pertinence is the acquisition and interpretation of information about students under his direction. There is probably no teacher in a school system who knows more about the students in his classes than the teacher of agriculture. This information should not be hoarded. It should be shared with the counselor and others.

The use of a student inventory is a common practice among teachers of vocational agriculture. They have realized that it is important to obtain information about the home farm. But there are other facts that also have relevance to guidance procedures. Information about the fam-

ily, work experiences, likes and dislikes, occupational aspirations and plans, as well as personal problems should be included, unless they are obtained by counselors and placed in the centralized student personnel files.

Few other teachers have the same students over a four-year period as does the typical teacher of vocational agriculture. Thus, he is presented an unusually favorable opportunity to accumulate achievement data and other information on students. This information, too, should be shared with the counselor.

The opportunities for farm and home visits which come to teachers of vocational agriculture have been the envy of counselors and other teachers. These visits provide teachers with first-hand observations, reactions from parents, and informal chats with youth. Experienced teachers would testify that through such visits they frequently have found the explanation of some students' problems and difficulties. Counselors often have expressed the hope that such information be shared with them. Surveys of teachers, however, have not indicated that they do this as much as they could. The sharing of this valuable information could be taken care of through periodic consultations with counselors. Or it could be reported through anecdotal records. These brief recordings of observations of unusual behavior or accomplishments generally are encouraged by counselors.

Leaders in guidance and counseling are realizing more than ever before that school programs of guidance can be effective only through cooperative effort by all teachers and guidance personnel. Team work is the answer to the question of effective guidance of rural youth. □

Time Allocation to Summer Activities Areas

JOHN K. COSTER and NORBERT J. NELSON, Teacher Education, Indiana

The principle of institution directed practical experience has been established as an integral part of vocational agriculture. Inasmuch as farming is a highly seasonal occupation, and certain experiences are peculiar to the summer month, the principle of

year round instruction likewise has been firmly established. Indeed, vocational education in agriculture has pioneered in utilizing school plant and personnel over the calendar year. In recent years, there has been a trend toward expanding summer educational

programs and this trend is likely to continue and be accelerated in future years.

Whereas in offering summer programs in other areas, the major problem may be to identify activities for the summer program, the problem

in vocational agriculture currently appears to be centered in establishing a priority of activity areas. The literature on the summer program in vocational agriculture is replete with a multiplicity of activities in which the teacher may engage to justify summer employment. These suggestions are part of a normal process in program development. With maturity of the program, however, priority should be crystalized and a hierarchy of importance should be established.

The question of the proportion of time to be devoted to each of five major summer activity areas, exclusive of vacation, and attendance at summer school, was put to 48 vocational agriculture teachers and 30 school administrators in two administrative-geographical districts in Indiana.¹ Each teacher and each administrator—superintendent or high school principal—was asked to indicate his opinion of the proportion of time that should be allocated to the following major areas:

1. *Visiting high school students.* This activity area included supervisory, on-farm instructional, and guidance visits to high school students and prospective high school students as well as individual consultation at school. It included the time devoted to guiding and directing activities of the local Chapter of Future Farmers of America, but did not include time spent in preparing for teaching.

2. *Visiting adult and/or young farmer class members.* This area included supervisory, on-farm instructional, and guidance visits to present and prospective members of adult and/or young farmer classes, as well as individual consultation at school, but did not include time spent in preparing for instruction.

3. *Preparing for instruction.* This activity area included preparing or revising courses of study, collecting teaching materials, preparing lesson outlines, and other activities in which teachers may engage to prepare for more effective instruction.

4. *Other activities.* This area included activities excluded from the aforementioned areas, such as attending summer conferences, workshops,

field days or other activities and events which are part of in-service teacher education programs.

5. *Participating in school related activities.* This activity area included the activities of teachers which are not directly under the administration of the local public school system, but which, nevertheless, may be accepted by local school administrators and community patrons as important contributions of the vocational agriculture teacher. The major activity of Indiana teachers in this area, from the standpoint of time involved, is leading or assisting with 4-H Club activities in local communities.

Percentage categories were set up (e.g., 0 to 10 percent, 11 to 20 percent, 21 to 30 percent), and respondent checked the percentage category which most nearly represented his opinion as to the amount of time that should be allocated to the specific area. Random sampling from a normal population was not assumed, and generalizations were limited to the group studied. Tests of independency of proportions in contingency tables were made by the chi-square statistic.

The central problem of the study was to ascertain judgments as to the proportion of time that should be allocated to each of five areas. Subsidiary problems included:

1. What was the extent of agreement between school administrators and vocational agriculture teachers with regard to time allocation?

2. What was the extent of agreement between teachers and administrators in two administrative-geographical districts with regard to time allocation?

3. What was the extent of agreement between current and desired allocation of time to the five areas?

Concerning the amount of time that should be devoted to each of five areas, median responses indicated the following distribution:

Visiting high school students	35%
Visiting adult and/or young farmers	20%
Preparing for teaching	15%
Other activities	10%
School related activity	20%

Thus, general agreement indicated that more than one half of the teacher's non-vacation time should be allocated to individual consultation, one fourth of the time should be allocated to preparing for teaching including the attendance at conferences, workshops, field days, and similar events, and not more than one fifth of the

time should be allocated to non-school but school related activities.

With regard to agreement between school administrators and vocational agriculture teachers, results of the analyses indicated substantial agreement between the two educator groups for the current practice pattern for time usage and the desired time allocation pattern for time usage, both for the total number and for the number in each district. Not a single hypothesis of independency of proportion was rejected.

Pertaining to the study of administrative-geographical districts, both the administrators and teacher groups agreed on four of the five areas. The hypothesis of equal proportions pertaining to allocation of time to school related activities, however, was rejected both for the administrators and for the teachers. The administrators and teachers in District "Y" indicated that more time should be devoted to school related activities than the administrators and teachers in District "X." The strength of the agricultural extension programs in the counties in District "Y" was believed to have been a strong, albeit indirect, force in developing opinion behavior with regard to the amount of time teachers should devote to school related activities, of which assisting in 4-H Club work is the major concern.

The subsidiary problem pertaining to comparing opinion behavior with regard to current time distribution to desired allocation of time was analyzed in only one district. Teachers were asked to estimate the proportion of time they currently were devoting to each activity area, and administrators were asked to indicate the proportion of time they believed teachers were devoting to each area. The two groups agreed on the proportion of time allocated or believed to have been allocated to each area. Then teachers and administrators were asked to indicate the proportion of time that should be allocated to each area. Again, the two groups agreed on the allocation. By comparing what is now (or believed to be now) with what should be the time allocation, it was found that both teachers and administrators indicated that more time should be allocated to visiting adult and/or young farmers and less time should be allocated to school related activities than currently was being practiced. The difference in proportions were statistically significant for both groups. In addition, administrators believed that less time should be

¹For the complete study, see Norbert J. Nelson and John K. Coster, *How a Selected Group of School Administrators and Vocational Agriculture Teachers Believe the Teachers' Time Should Be Distributed Among Selected Summer Activity Areas*. Studies in Education, No. 6; Lafayette, Indiana; The Division of Education, Purdue University, 1959. 19 pp.

allocated to "other activities"—such as conferences, workshops, and field days—than currently was being practiced.

The salient points of this research may be summarized as follows:

First, the school administrators and vocational agriculture teachers agreed on time allocation. Caution should be exercised, however, on generalizing on this point. The respondents were school administrators and vocational agriculture teachers who attended two district meetings dealing with the summer program. Nonattenders were not queried, and their patterns of agreement are not known.

Second, both school administrators

and vocational agriculture teachers believed that more than one half of the summer work should be devoted to the visitation program—to supervisory, on-farm instruction, and guidance visits to present and prospective students of vocational agriculture. One fourth of the summer time should be set aside for activities which lead to more effective teaching. And not more than one fifth of the time should be allocated to school related activities.

Third, in the one district in which comparisons were made between opinions of existing and desired time allocations, both teachers and administrators were agreed that more time should be allocated to the visitation

program, especially to present and prospective adult and/or young farmer class members, and less time should be allocated to school related activities, which, in Indiana, means that less time should be allocated to leading or assisting with local 4-H club programs.

A key to the effective operation of the summer program of vocational agriculture is deciding upon time allocation to major activity areas. This research was conducted and findings analyzed to ascertain the established opinion of a selected group of vocational agriculture teachers and school administrators regarding time allocation to five summer activity areas. □



Establishing Young Men in a Farm Business

H. T. LESTER, JR., Teacher Education, Georgia

Selecting an occupation is an important step in the life of every young person, and the choice needs to be considered very carefully. There is a loss not only to the individual but to society if a man spends several years in an occupation only to become an economic casualty. The individual and society advance more if he chooses an occupation in which he becomes established permanently. Thus, a young man expecting to enter farming should have guidance and occupational information that will reveal current farming conditions.

How Data Were Secured

A study was made recently in Missouri to determine some of the information that might be helpful in assisting young men in starting and progressing in a farm business.¹ The specific purposes of the study were to ascertain: the personal characteristics of the young men now farming; the

sources that were used in accumulating initial assets; and the farm status classifications that the men used in establishing farm businesses.

Data were secured through personal interviews with 100 full-time young farmers located in four reorganized school districts north of the Missouri River. Certain prerequisites were designated for the population centers, and the four districts were thereafter selected at random. Similarly the young men included in the study were selected at random.

Personal Characteristics

The mean age of 100 young farmers included in the study was 28.3 years. All of them started between the years 1946 and 1957.

Ninety-three percent of the men were born on farms; five percent were born in large cities and the two percent were born in small rural towns. Only five percent were found to be farming in counties other than the counties in which they were born.

The farmers in the study had received an average of 11.2 years of schooling. There were 15 percent who completed eight grades or less

and 15 percent who entered high school but did not graduate. Sixty-three percent had completed high school and seven percent had attended college. Seventy-six percent indicated that they had been enrolled for one or more years of vocational agriculture, and, of these, over one-half had completed four years.

The reasons the young men gave for starting farm businesses were numerous. Ninety-eight percent stated that they liked farming and that they liked to work with machinery. Nearly 90 percent also gave the following reasons—had opportunity to obtain a farm, and like the diversity of jobs in farming.

Farm Status Classifications

At the time of the study, the young farmers were found to be in four different status classifications or a combination of these classifications. Fifty percent were farming in father-son partnerships, 38 percent were owners or owner-renters, 20 percent were share tenants and 11 percent were engaged in partnerships away from home. Sixteen percent had engaged in some nonfarming activities since starting to farm. However, at

¹Based upon a dissertation by the author as a research assistant, Department of Agricultural Education, University of Missouri, entitled, *How Young Men in Missouri Communities Serviced by Vocational Agriculture Start and Progress in Farming*.

the time of the study they were receiving over 50 percent of their income from farming and were working less than 100 days off the home farm. Thus, they were considered full-time farmers for the purpose of this study.

The pattern followed by the men in establishing farm businesses was father-son partnerships to share tenants to owners or owner-renters. However, it was not uncommon for them to by-pass the status of share tenants and become land owners directly from father-son partnerships.

Accumulation of Starting Assets

Upon entrance in farming the young men had accumulated an average of \$3,200 in starting capital, considering money borrowed to buy land, livestock, equipment, and for operating expenses, as an asset. They used a number of sources in accumulating assets: savings, credit, livestock, wife's interest, equipment, and land, as shown in Table I. Savings were used more often than any of the other sources; however, credit and accumulation of livestock accounted for the over three-fourths of the assets in terms of dollars.

Men with four years of vocational agriculture had starting assets of \$3,300 and those without vocational agriculture had starting assets of \$3,500. However, those without vocational agriculture had higher liabilities. The net worth of the two groups was approximately the same. Over one half of the 40 men without liabilities had completed four years of vocational agriculture.

The men used a number of techniques in obtaining finances after starting to farm. These included loans, working off the home farm, and earnings by their wives. Since their start in farming, 89 percent of the men had acquired 177 loans for an average of \$8,700 per person. At the time of the study, 85 men had 144 loans outstanding for an average of \$6,600 per person.

There was a relationship between the education of the young men and farm income, as shown in Table II. Those with post-high-school education had a higher income than those with less education, one-third more than high school graduates, and one-half more than non-high-school graduates. High school graduates had one-third more farm income than the non-high-school graduates.

Table I. Accumulation of Starting Capital of the Young Farmers by Sources and Average Values in Dollars.

Source	Number times used	Percent of total sources	Average amount (dollars)
Savings	83	32	938
a. Non-farm work	38	14	1,314
b. Farm work	22	9	930
c. Vocational agriculture enterprises	23	9	360
Credit	72	27	1,526
a. Bank	32	14	1,529
b. Parents	19	7	1,393
c. Wife's family	6	2	2,829
d. Others	14	4	1,983
Livestock	68	27	1,180
a. Vocational agriculture	34	14	1,179
b. Parents for farm work	24	9	1,304
c. Parents gifts	4	1	499
d. Others	9	3	1,233
Equipment (gifts or use)	29	11	863
Wife's interests	5	1	7,688
Gift or inheritance of land	2	1	6,860
Total	257	100	3,205

Table II. Post High School, High School, and Non High School Education in Relation to Farm Income

Education	Number	Average farm income (dollars)
Post high school	7	5,224
High school graduates	62	3,514
Non-high-school graduates	31	2,291

For the young men included in this study, there was a relationship between farm income and the year they started to farm as shown in Table III. This table reveals that the longer the young men had farmed, the higher their farm income. Thus, the young men who started to farm be-

tween the years 1946-1948 had a higher farm income than those who started to farm in later years. Further, the group who started to farm between 1949-1951 had a higher income than the group who started to farm between 1952-1954; and the group who started to farm between 1955-

TABLE III
The Year the Young Men Started to Farm in Relation to Farm Income

Year started farming	Total number	Average farm income (dollars)
1946-1948	30	4,077
1949-1951	29	3,404
1952-1954	18	2,799
1955-1957	23	2,171
Total	100	3,215

1957 had the lowest farm income. The pedagogical conclusion is that the earlier one starts to farm the better.

There was some relationship between years of instruction in vocational agriculture and assets, liabilities, net worth and farm income. Those with four years of vocational agriculture had higher farm assets, farm net worth, and farm income than any of the other young men with or without vocational agriculture, but they also had the second highest liabilities, as shown in Table IV. Those without vocational agriculture had the highest liabilities, the lowest net worth, almost the lowest assets and the second lowest income. Only young men with one year of vocational agriculture had a lower income.

CONCLUSIONS

1. Partnerships should be encouraged as an initial step in becoming established in farming. Otherwise, capital requirements and the lack of suitable land inhibits establishment.

2. Satisfactory progress toward establishment in farming can no longer

Table IV. Years of Vocational Agriculture Completed by the Young Men in Relation to Farm Assets, Farm Liabilities, Farm Net Worth, and Farm Income.

Years in Vo-Ag	Number	Relationships			
		Farm assets (dollars)	Farm liabilities (dollars)	Net worth (dollars)	Farm income (dollars)
None	24	38,999	15,980	23,019	2,725
One	5	43,470	6,060	37,410	1,560
Two	20	38,363	7,585	30,778	3,327
Three	8	25,994	1,769	24,225	3,537
Four	43	46,706	7,093	38,803	3,564
Average	100	40,591	7,417	33,174	3,215

be achieved through previously recognized steps leading from hired man to owner-operator; rather, emphasis must be placed on partnerships, with-in and without families, part-time employment in off-farm occupations, and proprietorship as share tenants and/or owner-renters.

3. Use of credit is essential in becoming established in farming. Otherwise, the acquiring of sufficient capital to operate a business of adequate scope is a relatively slow process.

4. The intricacies of farming are such as to require considerable formal education to operate a farm business of adequate size.

5. Persons who expect to farm would find it advantageous to enter the occupation at an early age.

6. Young men becoming established in farming have need for educational assistance and will avail themselves of instruction and information which contributes to the successful operation of their businesses. □

Career Opportunities in the Poultry Business

R. I. LEACH and Others, Poultry Department,
California State Polytechnic College, San Luis Obispo

So rapidly has the poultry industry changed in the last ten years that it might be said to be a new industry today. The number of poultry farms has been steadily reduced while the average size of farms has been increased. These changes have created many new and different types of job opportunities.

Allied Fields in Industry Provide Most Job Opportunities

There are four to six career opportunities in the allied fields for each job on the farm. These are in the services of marketing, sales, poultry product processing and the feed distribution.

Market reporting and market statistics, as well as assembling production data, require an understanding of basic economics and of poultry products. Many job opportunities await young men trained in this field.

Chain stores, super markets, and food handlers are demanding a source of poultry meat and eggs of the highest quality, in readily available volume, properly packaged and standardized for their customers. Many of these large handlers of poultry food products are developing their own procurement and processing plants and are looking for trained, skilled employees to operate these plants and carry out specialized skills in these processes.

Allied industries have broadened the job opportunities for college-trained young men in the poultry industry. The geneticist, laboratory technician, flock health supervisor and production specialists all work together as a team toward more efficient production of poultry products and better distribution to the consumer.

Sales and Distribution Careers

Sales, servicing and distribution of new equipment and products provide many new job opportunities. Mechanical feeders, mechanical house cleaners, egg graders, egg cleaners, poultry house ventilation systems, egg cartoning and candling equipment are all new and recent developments. New products and new methods are developed constantly and provide ready and interesting jobs in sales and service work for people trained in poultry husbandry and business practices.

Servicemen and salesmen are needed by all large hatchery organ-

izations. They not only sell to new and old accounts, but assist the customers in production planning, better product distribution, improvement toward efficient methods, promotion of good will to the company and its product. The serviceman is the company's representative in the field and must be fully informed on business and industry needs and activities as well as being able to help the customers be more successful.

Chemical companies and pharmaceutical firms manufacture and distribute products needed by poultry producers. People who understand poultry production are needed to assist in having these products used properly.

Sales of products and chicks to poultry ranches require that the salesman know and understand the poultryman's needs and is familiar with basic business principles.

Supervisor Personnel in Large Integrated Units

Trends toward larger producer units, contract production and integration are all examples of master planning the entire program of efficient production and quality control of products. These larger units smoothly blend the technical functions of production and marketing and often carry on through the merchandising and packaging of the products. Greater training and skills in science and business are needed by these departmental supervisory people.

Broilers are grown to fit a master timetable of having the correct sizes, qualities and packages at the retail stores as needed by the consumers. This time and quantity flow requires close supervision and planning of dressing and grading plants, grower units, hatching egg production, baby chick hatching, proper nutrition sources and even back to proper genetic breeding programs. Most broilers are retailed fresh so extra precautions are needed in chilling, handling and sanitation.

California is the most important poultry industry state in the U. S. Nearly 10 per cent of all agricultural income in California is from poultry products. California is the leading egg production state and normally operates with about 23 million layers. California is the second largest producer of turkey meat and this state is the largest consumer of turkey meat products. This state produces and processes about one million broilers per week.

Feed Industry Needs Poultry Trained Help

California manufactures and distributes about 4½ million tons of feed per year. More than half of this is used in the poultry industry. A survey of the American Feed Manufacturers Association showed that forty-five feed manufacturers planned to employ 370 agriculture college graduates in 1960. These positions include sales and servicemen, purchasing personnel, nutritional technicians, retail sales managers and others.

Improved technological practices in nutrition, breeding and production methods have been very rapid during the last ten years. These scientific developments and more technical procedures as well as the many new feed additives, drugs, antibiotics and mechanical equipment have created not only many new job opportunities but positions that require special training and skills.

Job opportunities await college-trained young people in the field of preparing and developing feed additives, vitamin supplement mixes, mineral mixtures, antibiotic and drug preparations. These new and improved products are improving production efficiency and increasing the marketability of poultry products as well as an increased service to the consumer. Sales, packaging distribution, and servicing of these new products of the poultry industry provide many interesting and challenging job opportunities.

Processors Preparing the Poultry Products Need You

Processing plant sanitation, proper package labeling, grade standardization, product quality control and consumer education programs are all of benefit to both the producer and consumer of market poultry products. Job opportunities in these areas are available either in government type positions or private industrial poultry companies.

Opportunities with many companies await young men in developing new products and new processes of marketing products used by this changing industry.

Large poultry dressing and processing plants, some of which process up to 6,000 birds per hour, need highly-skilled technicians for efficient labor and equipment management. They also need scientifically-trained

people for product quality control and sanitation.

Laboratory Work, Teaching, Credit and Finance

Business banking, finance and credit companies are looking for appraisers, credit managers and loan officers with a basic understanding of good poultry production practices, and one who is well trained in business principles.

Teaching, extension work, and research work provide many opportunities for poultry-trained people. These functions require specialists to assist with production or marketing problems of either the rancher and egg producer, or the product processor.

Laboratory technicians are needed in the production of vaccines, blood typing, genetic studies, egg quality control standards, egg breaking plants, and disease diagnosis laboratories. The technicians must understand the biology of the fowl as well as basic science practices in the laboratory.

Egg technology and egg quality control standards are essential to both the egg processor, producer, and consumer. These job opportunities are with cooperatives, egg dealers, and egg product manufacturers.

Yes, there are many Career and Job Opportunities for young people in the Poultry Industry. More than fifty kinds of jobs await those who are trained in poultry husbandry, poultry science and a good background in business principles. Let's look further into these many opportunities! □

AUGUST

IS A GOOD MONTH

TO REVISE COURSE

CALENDARS AND TO

REPLENISH FILES

OF TEACHING

MATERIALS.

What Now For "Joe"?

BUD CLINE, Senior, Agricultural Education, Kansas State University



This question will have to be answered by many farm boys this year, and in years to come, as they graduate from high school.

Many of these boys would like to farm. They have grown up amid farm surroundings, they are familiar with its problems and advantages, and they like the farmer's way of life.

Yet our boy "Joe" does not have from \$50,000 to \$60,000 with which to start farming. He has younger or older brothers who also would like to farm. His father is not ready to retire and does not have an enterprise that is large enough to share with his son or sons. The fact that, as far as our national economy is concerned, we do not need more farmers is clearly understood by "Joe."

What now for "Joe"?

We cannot create land or capital, and it is a difficult task to create a greater demand for agricultural products. Perhaps if we are going to be resourceful and creative, the only place left to start is with "Joe."

Ask "Joe" what he likes to do besides farm.

"I like to handle livestock, ride horses, hunt, fish, and tinker around on my hot-rod," he says.

His remarks tell us that "Joe" is a boy probably eighteen years old. He will grow and develop physically, and mentally also, if he is given the necessary guidance and direction. He is likely to say that he doesn't want to teach, to sell any kind of merchandise, or to talk to groups of people. Actually he is just a humble, reserved boy.

Let's ask "Joe" why he enjoys handling livestock, riding horses, and tinkering on his hot-rod. If we can pry the facts from him, we may learn that he is a fair to good rider, a pretty good sportsman, and somewhat apt mechanically. All in all, he feels confident when he is doing those things he is experienced in doing, and feels

inadequate when he thinks of tasks he has not tried.

If we ask our high school graduate to take his pencil and figure, using his present earning power, how long he thinks it will take him to earn enough capital to start farming in a way that would be economical, he may say that it looks almost impossible for him ever to save enough money to do so. Or he may feel that he would be so old that he would no more than get the business developed before he could no longer manage or enjoy it.

Let's recreate "Joe" by sending him on to school, to the institution that is responsible for fully developing the individual. He isn't developed, as yet, to the extent that his society needs him in any great numbers. Can we convince him that a college education is probably as necessary to him as a high school education was to his father? He has already admitted that, in his present capacity, society does not need him to carry on any particular economic function. Will he go hunting and fishing with us for a few years, studying further in school those things that interest him now; learning to feed animals scientifically, as well as knowing how to curry and saddle one; learning how to design an automobile, which is but an economical adaptation of his tinkering ideas; learning to manage and preserve wild life, as well as being able to bring it down with his gun?

Information from placement and alumni records will show that somewhere on this hunting and fishing excursion "Joe" will mature and find his game. He will be older and at least wiser in experiences, which will enable him to pursue his game responsibly. Society will hold a wider selection for this new hunter than it did for the young sportsman.

Placement personnel and business representatives say that a farm background is beneficial in occupations

other than farming. "Joe" will know how to jump on the tractor with a farmer, and as they ride around the field "Joe" will be able to talk to the farmer about his lubrication and fuel problems. He will know a Southdown from a Hampshire and the difference between a capon and a cockerel. The farmer will recognize this familiarity, and, having a common bond with our young man, may be more likely to trust his judgment and recommendations.

"Joe" may find that he had rather work with the farmer, farm boys, or business men, on farm-related problems, rather than work for a farmer, as a hired man upon a haystack or manure spreader.

Before our lad will leave the barn we may need to sweep his loft of some hay, outdated seeds, and briars. Collegiate dual carbureted chariots and bear-skinned coats have proven as unsatisfactory for the scholar as the hickory switch has for the schoolmaster; both are only poor means for poor ends. He may need reassuring that somehow there is a way, through scholarships, part-time work, or loans. Perhaps some help will come as money from his home, a home that did not think it had money to spare until its successful student needed help. His real limitation may be largely a figment of his imagination.

Even though we may not desire to take all the farm out of our boy, it is desirable to use every fishing pole, hunting excursion, grab bag, and rainbow vision available to prepare a place for him, or him for a place in our society. □

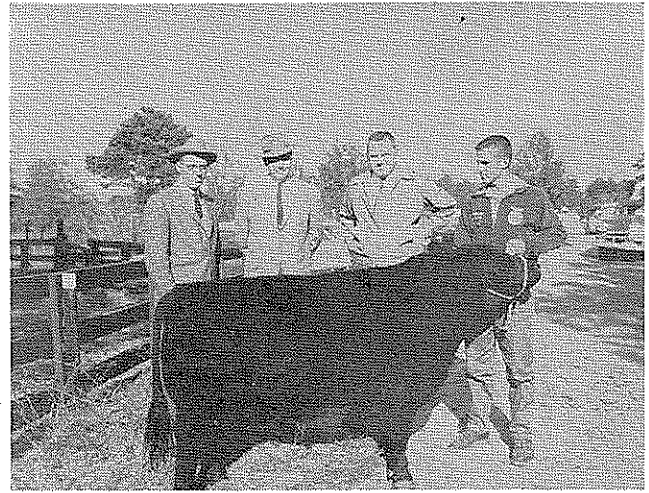
*Hats off to the past;
Coats off to the future.*

Author unknown

Stories in Pictures



Preparing a Livestock Judging Team. Elmer Schrag, North Platte, Nebraska, Instructor, Dale Young, Jim Garner, Marvin Knoll, Larry Montross.



Alabama Future Farmers of America are making available to cattlemen in their communities quality breeding at no charge. The bulls are donated by Briar Hill Farm, and are awarded to FFA Chapters. The Chapters show the bulls at Fat Calf Shows, keep them for three years for breeding purposes, and then sell them to a cattleman in the community, returning \$250.00 to the State FFA Association to continue the program. Shown in the picture are Dr. W. M. Warren, Head of Auburn Univ. Animal Husbandry Department, T. L. Faulkner, state supervisor of vocational agriculture, Dr. J. J. Hicks, donor of the bull, and Don Rawls, Dozier FFA Chapter representative accepting the purebred Angus.

BOOK REVIEWS

BETTER GRASSLAND SWARD by Andre Voisin (Translated from the French by Catherine T. M. Herriott), Crosby Lockwood & Sons, Ltd., London, 1960. 312 pp., 39 tables, 18 Diagrams. \$8.00.

This is the English translation of the book originally published in French and later in German and Spanish editions. It is a highly interesting and comprehensive treatment of the subject with emphasis on the extensive reporting of authoritative research done in America,

Germany, France, New Zealand, and Great Britain.

Although recorded in a style not generally followed in the preparation of high school vocational agriculture text and reference books, it is nevertheless organized in a manner well suited to ready reference. The content varies in nature from the very practical to the extremely technical, but the coverage is excellent and the reader will find the reading interesting and compelling.

The book is divided into 16 Parts representing many important segments of the subject, *i.e.*, "Effect of Grazing . . ." and "Influence of Seed Mixture. . ." Each of these Parts is further subdivided into from one to seven chapters, each

dealing with specific subject matter analysis containing a wealth of research to support the author's comments regarding grassland management and the science involved.

Reading this book should be an excellent and challenging experience to a farm boy. The book itself should be a valuable addition to the bookshelf of any farmer seeking to know and understand grassland improvement.

The author is the internationally known French scientist, Andre Voisin, who also wrote the widely acclaimed "Soil, Grass, and Cancer" and "Grass Productivity."

George L. O'Kelley, Jr.
Teacher Education
University of Georgia

FUTURE THEMES

September—Materials and Methods

October—Lay Participation

November—Impact of Industrialization on Vocational Agriculture

December—The Effect of Vo-Ag on College Success

January—Is the Farm Mechanics Program Keeping Up?

(Editor's note: For a fuller description of each theme, see the April, 1961, issue of the Magazine, page 229).

Stories in Pictures



The Yerington, Nevada, Vocational Agriculture IV class on a soil judging field trip. Left to right: Bud Schafer, Ron Menesini, Steve Menesini, Wayne Bowman, Charles Burr, George Jones, Wilbert Aiazzi, John Musselman, Ron Compston, George Hamilton, and the instructor, Duane Eriksmoen. The picture was taken by Arnold Nowotny, SCS Director, who helped with the instruction.



The University of Maryland Collegiate Chapter of the Future Farmers of America bestowed the Honorary Chapter Degree on Conrad Liden, Assistant to the Dean (left) and H. Palmer Hopkins, Director of Scholarships and Student Aid (center). The degree is awarded for outstanding service to the Collegiate Chapter. Leslie M. Cregger, a recent graduate in Agricultural Education, (right) served as toastmaster for the event.



Alton Calvez, (left) president of the Texas A. & M. Collegiate FFA Chapter, congratulates Bill Cepica for having won a \$100 scholarship given by the Chapter. The scholarship is awarded annually to a deserving junior, primarily on the basis of need by the individual. The scholarship was awarded at the Annual Student-Prof Banquet. This annual event is also a time for recognizing other outstanding individuals within the Chapter as well as professors in the School of Agriculture.