

NEWS TO ME

A NEW SPECIAL EDITOR



A new feature in Agricultural Education Magazine will be the presentation of reviews of research. Dr. J. David McCracken is Information Specialist, ERIC Clearinghouse on Vocational and Technical Education, The Center for Vocational and Technical Education and Assistant Professor of Agricultural Education, The Ohio State University. In his position, Dave has responsibility for research reviews and other information analysis products published by VT-ERIC Clearinghouse. The article by Harold Wallace in this issue is the first selected for inclusion in Agricultural Education Magazine. Others will be published in future issues.

Representatives from 12 states, including 6 Governors, participated in regional activities for vocational agriculture students and FFA members at the Eastern States Exposition, September 18-25. Five thousand observed a ceremony honoring the Regional State Star Farmers and Agribusinessmen which was coordinated by Jesse A. Taft, Program Officer, USOE, Boston.

PACE Production Inc., 4447 North Victoria St., New Brighton, Minnesota, 55112 has developed a series of super 8-mm. color film loops. Each loop presents a single concept. Cost \$22.00 each or \$200.00 for the horticulture series of 10 and \$160.00 for the animal science series of 8.

WORK EXPERIENCE ABROAD (WEA), an International Exchange Program of the Future Farmers of America, enables participants to study and observe agricultural methods and gain insight into the history, culture, traditions and way of life of other people, by living and working as a member of a farm family abroad. A participant must have completed his junior year in high school, and be no more than 21 years old at the time of submitting his application, have satisfactorily completed a minimum of two years of vocational agriculture, and have practical experience in farming, ranching, horticulture or other specialized field of agriculture. The program begins in early June and extends either 3 or 6 months. Students receive board and room plus a small stipend while with the host family. Basic costs to the individual are approximately \$500 for South America, \$650 for Europe and \$1100 for Oceania. For additional information write to: National FFA Center, P.O. Box 15160, Alexandria, Va. 22309

Changes from the traditional pattern of in-service training may be on the horizon. Rather than reduce the hours in the work week, one proposal has been made that employees be retained on the 40-hour schedule and devote one day to on-the-job study and training at employer expense.

The report of the Minnesota State Advisory Council for Vocational Education — 1970 states that some post-secondary education is essential for 85 out of every 100 high school graduates before entering the world of work and adult living.

The Third Report of the National Advisory Council on Vocational Education, published July 10, 1970, recommends four basic steps be taken to fulfill our goal for better education. These are:

1. Recognize that employment is an integral part of education.
 - a. Every secondary school should be an employment agency.
 - b. Part-time employment should be a part of the curriculum.
 - c. The further education of the drop-out.
2. Give priority to programs for the disadvantaged without separating the disadvantaged from the mainstream of education.
3. Encourage parents and students to participate in the development of vocational programs.
4. Establish residential schools for those who need them most.

A movie entitled "The Inheritors" has been produced by The Ford Motor Company, in cooperation with the National FFA Foundation. It tells the story which the 1970 National FFA officers conveyed during their year of travel to all parts of the U.S. Write to your State FFA Advisor or Executive Secretary regarding booking.

Approximately \$1.4 billion was spent for vocational education in 1969 compared to \$605 million in 1965. Student enrollment has been increasing faster than the funding, despite the doubling of funds, with state and local governments appropriating most of the money. Enrollment increased nearly 50% between 1965 and 1969 with post-high school vocational education enrollment showing the largest increase — nearly 20%.

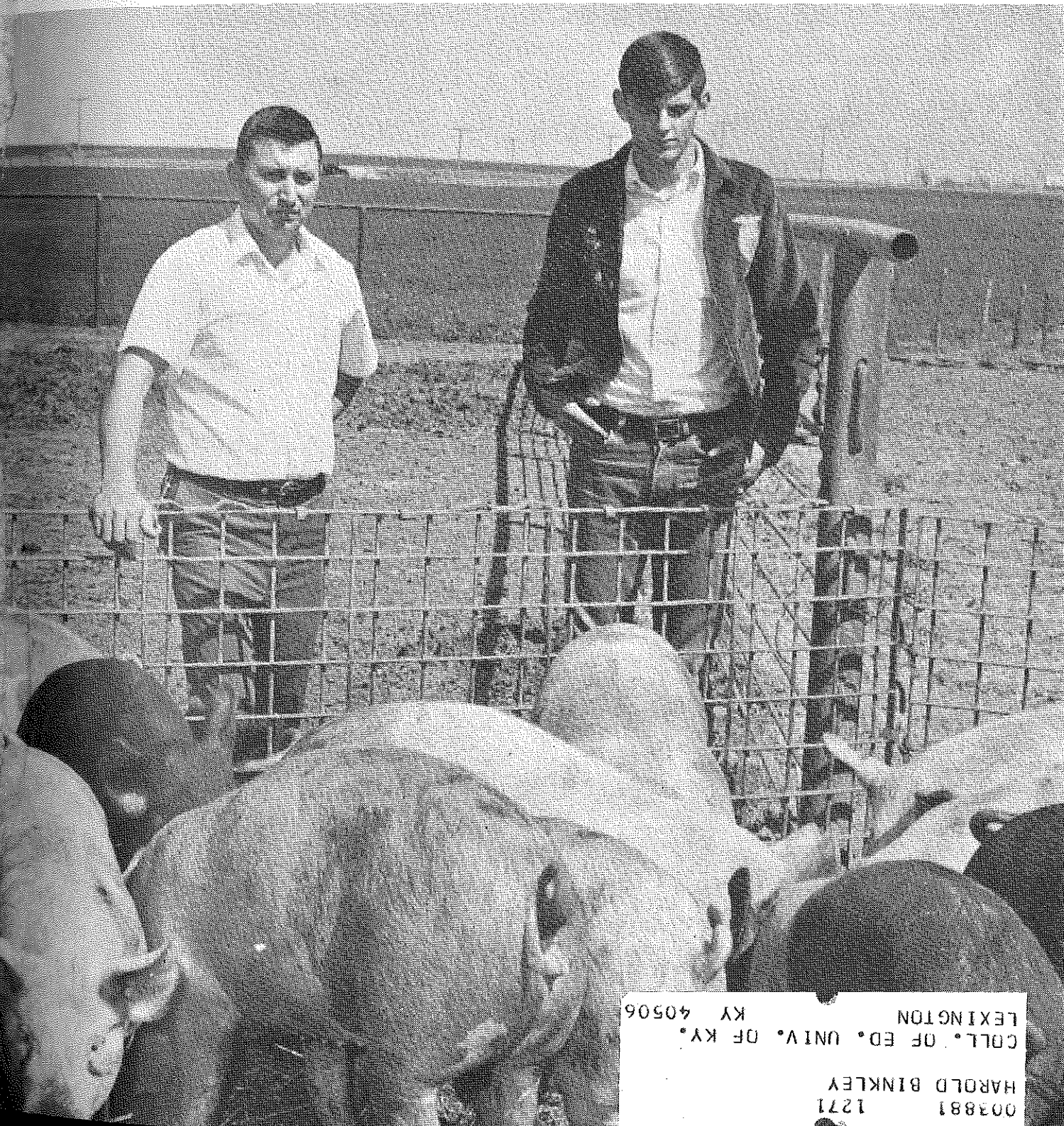


Volume 43

Agricultural Education

February, 1971

Number 8



003881 1271
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LEXINGTON KY 40506



The
**Agricultural
Education**
Magazine

Vol. 43 February 1971 No. 8



TABLE OF CONTENTS
THEME — PLACEMENT AND FOLLOW-UP

Editorials	
The Importance of Placement and Follow-up	Paul E. Hemp 187
The Importance of the Student	Harry W. Kitts 188
New Appointments	189
From the Research Editor's Desk	J. David McCracken 190
Where Are Your Male Graduates Employed?	Howard L. Poitevin 191
The Occupations of Vocational Agriculture Graduates	Gerald R. Lamers 192
Helping Students Choose A Career	Allen Blezek 193
A Follow-up Study Provides Information for Evaluation	
Harold D. Huber and David L. Williams	194
Stories in Pictures	Robert W. Walker 196
1968 New York Agricultural Graduates	Arthur L. Berkey 198
Book Reviews	199, 207
Misconceptions Concerning Vo-Ag Students	Robert L. Haynes 200
Interest of Two Ethnic Groups in Ornamental Horticulture	
Elmer Wright, Jr.	201
Freedom for Kenya — Work Through Agriculture	J. Martin Reid 202
Opportunities and Requirements for Farm Machinery Mechanics	
Derrell L. Steakley and Earl S. Webb	204
Occupations of Male Graduates of Monticello High School, Iowa	
Grover C. Mische	205
News and Views of NVATA	James Wall 207
News to Me	Gleanings by your Editor 208

THE AGRICULTURAL EDUCATION MAGAZINE is the monthly professional journal of agricultural education. The publication is managed by an Editing-Managing Board and is printed at The Lawhead Press, Inc., 900 East State Street, Athens, Ohio 45701.

SUBSCRIPTION PRICE: \$3 per year. Foreign subscriptions \$4.00. Student subscriptions in groups on address, \$1 for October-May. Single copies 50 cents. In submitting subscriptions designate new or renewal and address including zip code. Send all subscriptions to Doyle Beyl, Business Manager, AGRICULTURAL EDUCATION MAGAZINE, Box 5115, Madison, Wisconsin 53705.

Send articles and pictures to the Editor or to the appropriate Special Editor.
Second-class postage paid at Athens, Ohio.

COVER PICTURE

A former vocational agriculture student who is now a member of the Young Farmer Organization is visited by his instructor, Elmo Castle of Garber, Oklahoma. The young man, Mike Murphy has now established himself in farming in the Garber community. Murphy graduated from high school two years ago and is operating over 1,000 acres of crops, has a registered Hereford cattle herd and operates a feeder pig project. (Photo by Robert R. Price, Oklahoma State University)

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GUEST EDITORIAL

The Importance of Placement and Follow-Up



Paul E. Hemp, Professor and Chairman, Division of Agricultural Education, University of Illinois, Urbana

Placement and follow-up activities should be an integral part of all vocational education programs. Students must be placed in suitable training stations in order to gain "hands-on" experiences in their chosen fields. Graduates must be placed in full-time employment in order to earn a living and contribute to the work of the world. The follow-up of students starts with their initial enrollment in vocational courses. It should continue, in one form or another, beyond graduation and throughout life.

Helping graduates become established in a vocation and providing them with follow-up instruction were clearly defined tasks when vocational agriculture programs were designed to train primarily for farming. Almost everything the teacher taught was designed to lead to establishment in farming. Graduates who became farmers were enrolled in a young farmers' program or an adult farmers' program where follow-up was a natural part of the instruction. Now that the clientele of our programs includes persons preparing for off-farm agricultural occupations, the job of placement and follow-up calls for new procedures and new teaching arrangements.

How can today's teacher of agriculture carry out the placement function? Should each local teacher be responsible for his own graduates or should a placement service be organized on a county or area basis? Should one placement service be provided for graduates from all vocational areas? Should teachers of agriculture work directly with state and private employment agencies to place graduates in suitable jobs? In discussing placement problems, we should not lose sight of the important job teachers have in placing graduates in postsecondary educational programs. Many of our graduates will not and should not go directly into the job market after high school graduation. In this regard, teachers of agriculture have done an excellent job of helping their graduates plan for continuing education. In many states, the percentage of graduates going on to college is higher for vocational agriculture than any other vocational program.

Follow-up of students goes beyond the placement function both in time and importance. The role of the teacher in the follow-up of students has been clearly defined but the role of the teacher in providing follow-up for graduates is vague and elusive. The follow-up program for graduates is important to the teacher as well as to the graduate. Only through follow-up can a teacher evaluate effectively the results of his teaching. Graduates engaged in agricultural occupations need follow-up instruction in order to keep up with new developments and move up the occupational ladder. It is most unfortunate that some state plans do not allow for reimbursement of travel for follow-up. Follow-up supervision must take place on the job and teachers need to travel to get to where the action is. Provisions should be built into local and state policies which would encourage teachers to perform the important functions of placement and follow-up.

Another aspect of a follow-up program that should be considered is the follow-up study designed to show what happens to graduates of high school and postsecondary programs. During the 1950's many teachers and state staff conducted follow-up studies to show the percentage of graduates going into farming. There has been a scarcity of follow-up studies reported in the literature in the 1960's. An annual survey of the occupational status of graduates and drop-outs should be conducted in every school district in the nation. These surveys provide basic data needed for evaluation and program improvement.

The placement and follow-up programs in local schools will be no better than the local and state policies which govern them. These policies should state explicitly that placement and follow-up activities are important and legitimate functions of a vocational education department. Furthermore, provisions must be made to pay teachers for placement and follow-up efforts. It is not enough to be for placement and follow-up. We must see that teachers are paid for this important function.

FROM THE EDITOR



Harry W. Kitts

Teachers, supervisors and teacher educators are searching their minds in an attempt to develop a curriculum in agriculture for the 20th century. When I listen to a discussion, two groups are readily identified. One group wants to adhere to the philosophy of "how" without the "why." Another group wants to teach less specifics and more generalities but include material on justification, interrelation, problem solving and job opportunities and the need for training. Some states have taken the leadership and published guides. These manuals may show adherence to tradition or bold departures which meet resistance from the tradition-bound individual. People in vocational agriculture were among the fore-runners in including material on job opportunities and occupational orientation. They provided work experience through the farming programs and more recently in related agricultural experience in business and industry. Students, whether they were high school or adult, were not designated as disadvantaged. They were accepted as they were. Instruction was planned to assist them to improve their level of living and contribution to rural leadership. During the advances of recent years one characteristic is evident: vocational agriculture has not lost the identity of the individual. The development of the individual is paramount. Acquiring technical knowledge in agriculture is only one area of attainment of this personal growth. There are four main areas in this individual development.

1. **THE STUDENT MUST BE AWARE OF THE OPPORTUNITIES IN AGRICULTURE.** The individual who takes the pessimistic, or one who takes the traditional, narrow view speaks of the declining opportunity for employment in farming. Less than 8% of the working population will have opportunity to become a farm operator. Accept the fact but broaden the concept. Forty percent of the working population is employed in occupations associated with agriculture. Forget the clamor for fame or credit and do the job — to prepare an individual to enter and make progress in a position. All students should be aware of the opportunities in agriculture. He may be a design engineer for a tractor company, she may be a laboratory technician working with experimental animals, one may be a weather forecaster for a TV or radio station, a credit man in banking, a geneticist with a seed company. Regardless of the station of employment, do not become so engrossed in the battle to gain recognition that you overlook the many chances to open doors to new horizons and opportunities to youth in acquainting them with the world of work.

2. **THE STUDENT MUST UNDERSTAND HIMSELF.** Every individual should analyze himself. He may need help from his parents, his teacher, the guidance counselor and individuals in business and industry. Test scores, aptitude tests, opportunity to observe working conditions and to analyze training needs are parts of the puzzle the individual attempts to put together as he thinks of his future. Does he have the emotional stability, is his personality adaptable to the outwardgoing of a salesman or the quiet, perhaps isolation of a researcher? Does he enjoy working out-of-doors

or is he opposed to the restrictions of a desk job in an office which requires the daily punching of a time clock? Does he possess the stamina and physical demands of heavy labor? Not only must the individual know the demands of various jobs but he must assess his own qualifications for each job.

3. **THE STUDENT MUST ESTABLISH A GOAL.** Too many individuals drift aimlessly too much of their life. President Nixon probably would not have been elected President of the United States unless he aspired to the position. As early as possible, a youth should identify his goal and work toward that end. If a youth wants to be a design engineer of agricultural machinery, he should begin in high school to acquire the mathematical abilities that will be needed in college. While in college he needs to continue this preparation for his future. If he delays the decision making until well along in college he may find himself deficient in mathematics and other sciences which will delay his entry into the field of employment. Youth are being asked to make critical decisions early in life. It is essential that we give them the tools to make these decisions.

4. **A STUDENT SHOULD DEVELOP A PLAN TO ACHIEVE HIS GOAL.** For efficient use of time and talent, the student should plan for his future. When he has decided to become a chemist for a milling company, he should plan his high school schedule to include those courses needed to enter college. At college he needs assistance in the selection of courses which will train him for his intended career. He may need business experience as well as technical knowledge at the college level. Each mistake he makes may be costly in time and money, even to the point of disappointment and discouragement or even abandonment of his program.

5. **THE TRAINED INDIVIDUAL MUST BE PLACED IN A FAVORABLE WORKING SITUATION.** In recent years emphasis has been placed on a favorable balance between the supply of trained individuals and the demands for such individuals in business and industry. How many opportunities are there for entry into farming in your community? Few new farm operators migrate great distances to establish operations. Therefore the number of replacements needed is fairly easy to determine. Opportunities for entry into the occupation may be on a personal one-to-one basis with retiring individuals or farms which become available upon the death of the operator. Entry into occupations in related agricultural fields may involve moving great distance. Information regarding the training needs, the working conditions and job advancement may not be available readily to the instructor or the student. Coordination and dissemination of information must be done on a broader scale. This becomes a state, regional or national responsibility. Students need more than the training to enter employment. They need assistance in securing that first position. They need assistance to advance in their employment. Our best training efforts are worthless if we cannot market our product. Several years ago International Harvester Company published a booklet titled *Young Folks Be Somebody — Do Something Useful — Grow the Best That's in You*. That challenge is the same today as it was when the booklet was written. But the job is too big for any one individual — it requires the cooperation and support and effort of many individuals. Join the team and do your part!

NEW APPOINTMENTS



T. L. Faulkner, of Montgomery was named Director of Vocational Education for Alabama to succeed J. F. Ingram, who recently retired. Mr. Faulkner heads a division of the State Department of Education that involves more than 2,500 employees on the state and local levels.

Faulkner is one of the State's leaders in vocational education and under his leadership Alabama should continue to hold its place among the top states in this field.



Dr. Arthur Lee Hardwick, recently appointed Associate Commissioner for Adult, Vocational and Technical Education, U.S. Office of Education, received the Bachelor of Science in 1958 and the Master of Science in 1960 with majors in Industrial Education from Kansas State Teachers College. In 1961, he received the Education Specialist Degree with a major in Technical Education from Kansas State College. Dr. Hardwick earned the Doctor of Education with a major in Higher Education from Oklahoma State University in 1967.

Dr. Hardwick has taught in the Riverside, California public schools. He was Chairman of the Engineering Department and Instructor at Cameron College, Lawton, Oklahoma. Dr. Hardwick's previous administrative and supervisory positions in education include Director of Manpower Development Training and Department Head, School of Engineering, Oklahoma State University, Oklahoma City; State Supervisor of Technical Education and Assistant State Director of Vocational and Technical Education, Oklahoma State Board for Vocational and Technical Education; and Education Research and Program Specialist, U.S. Office of Education, Dallas. He has also served as a consultant to the U.S. Office of Education.

Dr. Hardwick has industrial experience in engineering with Boeing Aircraft and McNally Manufacturing Company. He has experience in electronic data processing with the RCA Corporation in the positions of Education Systems Specialist, Director of Education Marketing and National Accounts Manager (Education), and Manager of Educational Systems Planning.



Dr. Earl T. Carpenter, a strong advocate of innovative curriculums to improve public education in South Carolina, has been named head of Clemson University's department of agricultural education. He succeeds Lowery H. Davis.

Carpenter has served in several academic and administrative positions at Clemson for the past three years.

A Hannibal, Mo., native, Carpenter has more than 20 years' experience in the vocational and agricultural education profession. He has done extensive work in curriculum development methods, believing that students can learn far more in courses of study which are adaptable to meet individual student differences.

Carpenter first served on the Clemson faculty in the early sixties in the agricultural education department. After five years of teaching agricultural education at the University of Missouri where he earned the bachelor's, master's, and doctoral degrees, he returned to Clemson in June 1967 to develop the S.C. Research Coordinating Unit for Vocational Education, an agency established on the campus in 1966.

Carpenter says the image of vocational education has improved immensely in recent years. He believes public awareness of the need for vocational and technical education and its willingness to support them are better than ever.

The primary purpose of Clemson's agricultural education department, says Carpenter, will continue to be the preparation of teachers for the high school and post-high school levels and the offering of in-service education programs for the state's vocational education teachers.



J. David McCracken
The Center for Vocational and Technical Education
The Ohio State University
Columbus, Ohio

The need for continuous appraisal of effectiveness is crucial given the facts that developments in science and technology, and a fast expanding economy are spelling out changes in the structure of the occupational world.

The articles by Howard Poitevin and Gerald Lamers are examples of studies conducted by teachers to appraise the effectiveness of vocational agriculture programs in their respective communities.

Researchers and teachers interested in a review of follow-up studies of graduates of programs of vocational and technical education should consult a publication developed by Dr. Kenneth Little of The University of Wisconsin for the ERIC Clearinghouse on Vocational and Technical Education at The Ohio State University.¹ Suggestions by Dr. Little concerning research problems and procedures dealing with follow-up studies and placement are summarized below:

1. Follow-up studies and placement should be viewed as a component of a larger system of studies — the evaluation of educational programs.
2. The evaluation of educational programs should use a systems approach in which the purposes of the educational program are defined clearly, outcomes of the programs are described specifically, higher criteria for achievement of purposes are developed,

and research designs are adapted accordingly.

3. A problem in the evaluation of educational outcomes is separating the value added by the school experience from the effects of manifold non-school activities.
4. One need is for a comprehensive longitudinal study of the in-school and post-school careers of cohorts of persons who move through the education system along different paths.
5. Most studies attempt to evaluate programs of education in terms of the organization of the educational system. Little research, if any, reports on persons when occupational skills and resulting employment come about through non-school activities.
6. Most research starts with persons in school and moves forward. Such studies should be complemented by acquiring information about those being employed, including the nature of their pre-employment training, if any.
7. There is need for understanding of variations in the labor market and in employment practices as they affect the placement of graduates of education and training programs.
8. Current studies tend not to look at individual differences among graduates of training programs. Within-group analysis sometimes

reveals useful insights not observed by use of statistical averages.

9. An error in many studies is inference of causal relationship between variables when either the data or method applied does not warrant the inference. This is a methodological and logical error which pervades research in many fields.
10. The basic weaknesses of studies, from the research point of view, is their design and statistical treatment. In fact, many of the studies were not conceived as research. They provide much information but little knowledge.

This review closes with a quotation from the report of the Advisory Council on Vocational Education, 1968.

"Effective occupational preparations is impossible if the school feels that its obligation ends when the student graduates. The school, therefore, must work with employers to build a bridge between school and work. Placing the student on a job and following up his successes and failures provides the best possible information to the school on its strengths and weaknesses."

¹J. Kenneth Little, *Review and Synthesis of Research on the Placement and Follow-up of Vocational Education Students*, Columbus: The Ohio State University, ERIC Clearinghouse on Vocational and Technical Education, February 1970.

WHERE ARE YOUR MALE GRADUATES EMPLOYED?



Howard L. Poitevin
Vocational Agriculture Instructor
West Union, Iowa

Where are the male graduates from your high school going after graduation and in what type of occupations are they employed? What factors are related to the occupational choices of male graduates from your high school?

With educational programs in Iowa under scrutiny by both taxpayers and members of the State legislature in regard to operating costs, effectiveness, and practical aspects of the total educational program, the above questions are of importance. With the shift of emphasis from a rigid traditional schedule to a more flexible variable educational program, feedback information from graduates is needed to adjust the total educational program to meet the educational needs of individual students.

This study¹ of 372 male graduates from North High School, West Union, Iowa, from 1957 through 1966 was to determine the factors related to their occupational status.

OCCUPATIONS

The graduates' occupations, as of December 1969, were classified according to the United States Census Report for 1960. This distribution was as follows:

Classification of Occupations	Percent
Unemployment	.6
Professional	17.5
Farm Operator	11.0
Manager	3.6
Clerical and Sales	11.3
Operatives	11.3
Service	7.1
Farm Labor	5.5
Non-farm Labor	1.9
Military	2.3
Student	13.3
	14.6

Of the graduates who responded, 56 (18.5 percent) were employed in off-farm agricultural occupations and 191 (63 percent) were classified as employed in non-agricultural occupations. It is noted that 34 (11 percent) of the graduates were classified as farmers and 6 (2 percent) were classified as farm labor. Of the graduates who responded, 96 (31 percent) were employed in agriculture. There was a positive correlation (.6273) between semesters of physical science completed in high school and semesters of college completed. Sixty-three percent of the graduates had not been enrolled in vocational agriculture. As expected there was a positive relationship between semesters of vocational agriculture and employment in agriculture.

MIGRATION

Those graduates classified as farm operators tended to migrate less with 80 percent located in the local school district and the remainder located within a 50 mile radius of the local school district. This compares to 44 percent of those graduates classified as professionals located outside of Iowa. Of the total respondents, 27 percent were located in the local school district. Only 34 percent of the male graduates had migrated from Iowa.

Information obtained in this study indicated that the North Fayette County Community School District and the area of a 50 mile radius does provide job opportunities for male gradu-

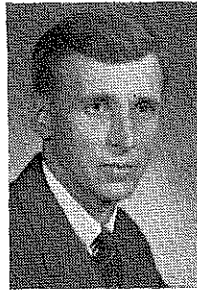
ates to enter the occupations classified as farm operator, clerical and sales, craftsman, operatives, service, farm labor, and non-farm labor.

IMPLICATIONS

Implications of this study indicate that the local school district should: (a) provide occupational training adapted to the interests and aptitudes of the male students, (b) design and adopt a class schedule that will allow vocationally inclined male students to enroll in mathematics and science courses designed to meet the needs of the non-college bound male student, (c) counsel male students concerning the educational requirements of specific occupations, (d) encourage male students to seek and use the area vocational-technical schools for additional occupational training, and (e) provide vocational agriculture students who have little opportunity to farm with training in the areas of off-farm agricultural occupations.

Reorganization of schools may be a solution in achieving the educational program needed by those graduates who tend not to be college bound. Through reorganization, vocational classes of sufficient size, needed on-the-job training, needed equipment, and adequate faculty can be provided on a practical and economical basis.

¹"Factors Related to Occupational Status of Male Graduates of North High School, West Union, Iowa." Master's Thesis. Iowa State University of Science and Technology, 1970.



THE OCCUPATIONS OF VOCATIONAL AGRICULTURE GRADUATES

Gerald R. Lamers
Teacher of Vocational Agriculture
Earlham, Iowa

Teachers of vocational agriculture continuously try to determine the factors related to the occupations of their graduates. In doing so, contact is made with the graduates to determine their present occupations, the home factors before and at the time of graduation, high school courses completed, scholastic attainment, their post high school education, and the characteristics of their present occupations. One hundred sixty-three farm-reared males who graduated from Earlham Community High School during the 1945 to 1965 period were contacted to determine their present occupations and the factors related to their occupations.¹

DESCRIPTION OF GRADUATES

Forty-nine and seven-tenths percent of the graduates were in non-agricultural occupations, whereas 48.5 percent were employed in agriculture, with 31.3 percent in off-farm agriculture, and 17.2 percent employed as farm operators, managers or laborers.

The census classification of the graduates indicated that 17.2 percent were in farming, 17.8 percent had entered professional occupations, 12.3 percent were managers, 14.1 percent were employed in services, and 14.1 percent were laborers. A total of 9.2 percent of the graduates were employed as craftsmen, 5.5 percent were in clerical and sales occupations, 5.5 percent were in military services, and the remaining 2.5 percent were operatives.

Of the graduates in farm-related occupations, 23.5 percent had entered farm machinery occupations, 19.6 percent were in construction, 15.7 percent were in seed, feed, grain, chemicals or fertilizer occupations, and 11.8 percent were employed in livestock occupations.

Thirty-five percent of the graduates had remained within the area served by the school district. The area with radius of 30 miles of Earlham contained 58.9 percent of the graduates. Another 4.3 percent lived within a 30 to 60 mile radius of Earlham, 12.3 percent lived beyond 60 miles, and approximately 25 percent of the graduates had migrated from Iowa.

FACTORS RELATED TO GRADUATES' OCCUPATIONS

Of the 163 graduates, 152 (93.3 percent) had fathers who were farming at the time of the son's graduation. Approximately 60 percent of the graduates, who were farming, had fathers older than 50 years of age, whereas approximately 60 percent of the graduates in non-agricultural and off-farm agricultural occupations had fathers under 50 years of age at the time of the son's graduation from high school.

Information indicated that 31.3 percent of the graduates ranked scholastically below the first quartile in their graduating classes, 32.5 percent between the first and second quartiles, 23.3 percent between the second and third quartiles, and 12.9 percent above the third quartile. Vocational agriculture was reported as being the most valuable course by 31.9 percent of the graduates, mathematics by 25.8 percent, and communicative skills by 23.9 percent of the graduates.

Ninety percent of the graduates had participated in the Future Farmers of America organization while enrolled in high school. More than 45 percent of the graduates reported that the Future Farmers of America had been of "much value," and 31.3 percent of the graduates reported it to be of "some

value" to them in their present occupations.

More than 35 percent of the farm-reared male graduates had enrolled in post-high school education other than college. Data indicated that nearly 40.0 percent of the graduates had some college training. Of the 81 graduates who were employed in non-agricultural occupations, 36 had attended college and 20 of the 52 graduates in off-farm agricultural occupations had attended college. Approximately 22 percent of the graduates employed on farms had some college training.

More than 30 percent of the graduates who had attended college had enrolled in agriculture, and 23.1 percent had enrolled in education. In comparing the graduate's class rank with his field of study in college, nearly 81 percent of those who enrolled in agriculture were ranked in the upper one-half of their classes in high school.

Findings of this study have implications for improvement in the secondary education program for farm-reared males. An exploratory program should be developed in vocational agriculture to meet the needs of the 8th grade students. Changes should be made in the Future Farmers of America activities and in the instructional program in agriculture to meet the needs of those interested in off-farm agricultural related occupations. Production agriculture should be stressed by providing additional instructional material for those entering farming. The study emphasizes the need for a careful analysis of local programs of vocational agriculture and revisions to meet the changing educational needs of farm youth.

¹"Factors Related to Occupations of Farm-Reared Male Graduates of the Earlham Community School." M.S. Thesis. Iowa State University of Science and Technology, 1970.

HELPING STUDENTS CHOOSE A CAREER

Allen Blezek
Vocational Agriculture Instructor
Hamburg, Iowa



Upon, or prior to, graduating from high school a young person may make one of the biggest decisions of his life — his life's work. We as vocational educators should, and must, help this individual in making his decision. Why? We must help him because his like or his dislikes of his work will, in effect, determine his successes or his failures in life.

While trying to help the student determine his occupational objectives, we must keep in close contact, and work with, the guidance counselor. Most guidance counselors, especially those without an agricultural background, will be aware of the fact that the vocational agriculture instructor is probably more knowledgeable concerning the educational skills and competencies required for various agricultural occupations and is willing to offer his assistance.

Literature on agricultural occupations to be used in agricultural guidance is abundant. Much of this literature is at your finger tips for the asking. Most large industrial agricultural companies compile brochures for free distribution. This material may be designed for recruiting young people, however, it should be kept in mind that these brochures will generally point out only the advantages and will seldom list the disadvantages of the occupation. State colleges of agriculture compile occupational information at regular intervals which is available upon request. Many government agricultural agencies compile agricultural

job opportunity data at regular intervals. We, as agricultural educators, have an abundant supply of occupational material for use in guiding our students.

Many of our students are of the opinion that a college education is a must to be successful. Where have they received this information? In many cases students tell us from their high school teachers. If this is so the next question is who are we trying to fool? Any educator should realize that only about 20% of the high school graduates in the United States go to college, and that furthermore, out of this 20% only two out of every ten graduate from college. Don't get a misconception. I am not saying that college is unimportant, only that we are fooling ourselves if we try to convince every student that he should go to college.

JOB OPPORTUNITIES

The high school graduate of vocational agriculture has more than 500 job opportunities in agriculture at his fingertips, some requiring college degrees, some requiring specialized training provided by the employer or by a trade or technical school and some requiring no training beyond the high school level.

After breaking down the occupational opportunities into general areas we must present to him the factors for consideration in choosing an occupation. The questions we might suggest that the student ask himself in determining his specific occupational area are:

1. What are the financial and non-financial rewards?
2. Is there, and will there, be a demand for this job?
3. What education or training will I need?
4. What is the nature of the occupation?
5. Where would I have to live if I had a job such as this?
6. Does this job require special personal qualities and abilities?

After we have presented to the student the general and specific traits of an occupation we must be careful to leave the actual decision or choice of occupation up to the student — the last thing that we want to do is to make the decision for him.

We, as professional educators, must:

1. Be willing to work with an co-operate with the school guidance counselor.
2. Be willing to work with the young person in helping him with his problems.
3. Provide the occupational information that we can obtain to help him in his choice.
4. Help him to determine his general directions and objectives.
5. Present to him the factors related to specific occupational areas.
6. Leave the actual decision up to the student.
7. Provide interest and encouragement regardless of his choice.

A FOLLOW-UP STUDY PROVIDES INFORMATION FOR EVALUATION



Harold D. Huber
Dean of Vocational and Technical Education
Spoon River College, Canton, Illinois
and

David L. Williams
Assistant Professor, Division of Agricultural Education
University of Illinois, Urbana



Systematic and continuous evaluation of a vocational education program requires the collection and analysis of various kinds of information. Data must be collected to determine the extent to which program objectives are being achieved. A follow-up study of graduates is one source of data that can be useful in evaluating a curriculum. It may not provide immediate answers regarding the effectiveness of a program, but it does yield information about the educational product that is essential for continuous evaluation. In discussing the use of follow-up studies that require a contact with individuals who have shared an experience in the past, Sharp and Krasnegor stated that: ". . . The usual goal of such studies is to arrive at some measure of the impact of the experience on the subsequent behavior or status of these individuals."¹

A Follow-up Study

A follow-up study of 151 graduates of the two-year Agricultural Mechanics Program at Spoon River College, Canton, Illinois, yielded data that may be used in evaluating the curriculum. Spoon River College is a comprehensive community college that offers a variety of two-year occupational programs and transfer curricula. Enrollment and retention data were compiled for the graduates of the Agricultural Mechanics Curriculum using the records available at the college. Other data collected related to placement and

employment of students after graduation, beginning salary, and salary at the time the study was made.

The major objective of the Agricultural Mechanics Curriculum is to equip students with the mechanical skills needed to enter the agricultural equipment mechanics occupation. In preparation for job entry, learning experiences are provided for the students in classroom and shop activities, and through on-the-job placement.

Enrollment and Retention

It is important to analyze enrollment and retention data when evaluating a curriculum to determine enrollment trends and to assess the holding power of the program. Data for the four classes completing the Agricultural Mechanics Curriculum is in Table 1.

When the four classes are considered together, 85 percent of the students entering the program completed within two years. The higher percentage of completions for the 1968 and 1969 graduating classes reflect the screening and selection procedures that were initiated when the students entered the program. During these two years there were more applications for the program than could be accepted. Each student was carefully selected through mechanical aptitude tests and personal interviews. The 22 percent not completing in the 1970 class was influenced by the fact that six students were ordered to active duty in the National Guard.

Two of these students have made plans to re-enter the program.

Placement and Employment

The on-the-job training coordinator maintains a file listing employment opportunities available to graduates. Employment placement of graduates has been expedited by scheduling on-the-job training during the last eight weeks of the two-year program. This allows the cooperating equipment dealers the opportunity to hire students they have helped train. The employment status of graduates is in Table 2.

Of the graduates responding for all four classes, 83 percent entered the occupation for which they were trained or a closely related field within four months following graduation. The "occupation-trained" refers to graduates who were employed full-time in an agricultural equipment dealership. "Related field" refers to students who were employed in production agriculture where they serviced and maintained equipment, or students employed in other occupations where their agricultural mechanical training had direct application. Thirteen percent entered the military service and two percent of the graduates enrolled in a four-year college program.

Two and three years after graduation, 64 percent and 47 percent of the 1967 and 1968 graduates respectively were employed in the occupation for which they were trained or a closely

related field. Eighteen percent of the 1967 graduates and 13 percent of the 1968 graduates were still employed by the company where they began their occupation. The main reason given for job change was "higher salary" and the "opportunity to advance." The military service obligation altered the employment status of some graduates.

Salary of Graduates

Graduates of the Agricultural Mechanics Curriculum are in popular demand by equipment dealers in need of trained personnel to service and repair modern agricultural equipment. Starting salaries commonly ranged from \$75 to \$100 per week. Salaries tended to move upward with each new graduating class, with a few of the recent graduates earning over \$150 per week. Two factors may be responsible for this increase in salary. Inflationary price increases have forced businessmen to pay higher wages to attract competent employees. Secondly, managers of equipment dealerships are beginning to look to the community college vocational and technical programs for employees and are willing to pay attractive salaries for qualified personnel.

The increase in salary from initial employment until the time of the study indicates that graduates are succeeding on the job. Over three-fourths of the graduates were earning over \$100 per week after two and three years of successful experience. (Table 3)

Summary

The study provided information regarding student retention in the curriculum and the success of graduates of a post-secondary agricultural mechanics curriculum. The data revealed that a large percentage of the students entering the program graduated two years later. Most of the graduates secured employment in their chosen field and have successfully advanced in jobs directly or closely related to their training.

¹Laure M. Sharp and Rebecca Krasnegor, *The Use of Follow-Up Studies in the Evaluation of Vocational Education*, Bureau of Social Science Research, Inc., Washington, D.C., 1966, p. 1.

Program Years	No. of Students	No. of Students	Percent Completing
	Beginning	Completing	
1965-67	40	34	85
1966-68	44	40	90
1967-69	46	41	89
1968-70	46	36	78

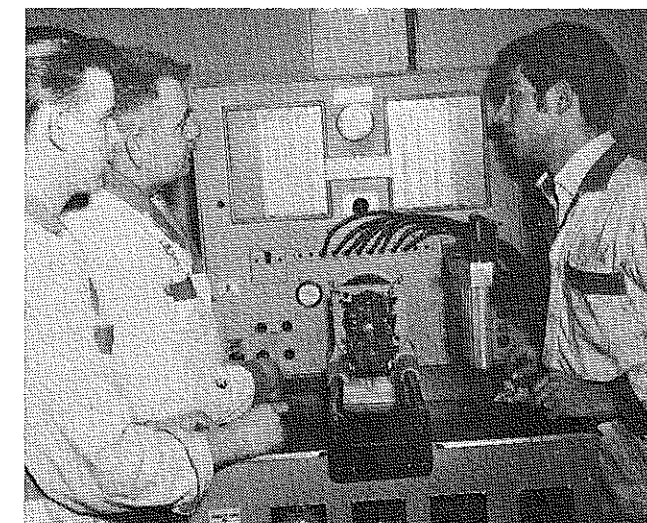
Table 2
Percentage of Graduates Who Entered Various Occupations by Year Graduated

Year Graduated	Occupation Trained	Placement			
		Related Occupation	Other Occupation	Military Service	Full-Time School
1967	59	32	0	9	0
1968	73	7	3	14	3
1969	42	39	3	10	6
1970	53	31	0	16	0

Table 3
Percentage of Graduates By Starting Salaries and Salaries at the Time of the Study

Year Graduated	Weekly Salary				
	\$75 or Less	\$75-100	\$101-125	\$126-150	Over \$150
1967					
Starting Salary	40	20	30	10	0
Salary June 1970	0	12	64	24	0
1968					
Starting Salary	26	42	32	0	0
Salary June 1970	0	20	80	0	0
1970					
Starting Salary*	15	73	7	5	0
1971					
Starting Salary*	20	51	21	4	4

*Starting salary and salary June 1970 were the same for 1969 and 1970 graduates.



Two students receive instruction from an experienced mechanic on the operation of testing equipment.

Stories in Pictures

ROBERT W. WALKER
University of Illinois



This senior Vo-Ag student (left) has established an excellent swine enterprise through his farming program. He demonstrated his respect and appreciation for the Vo-Ag program by giving his FFA Chapter two gilts which are being accepted by a green hand, thereby starting a "pig chain". (Photo by John W. Santas, Mayville High School, Wisconsin)

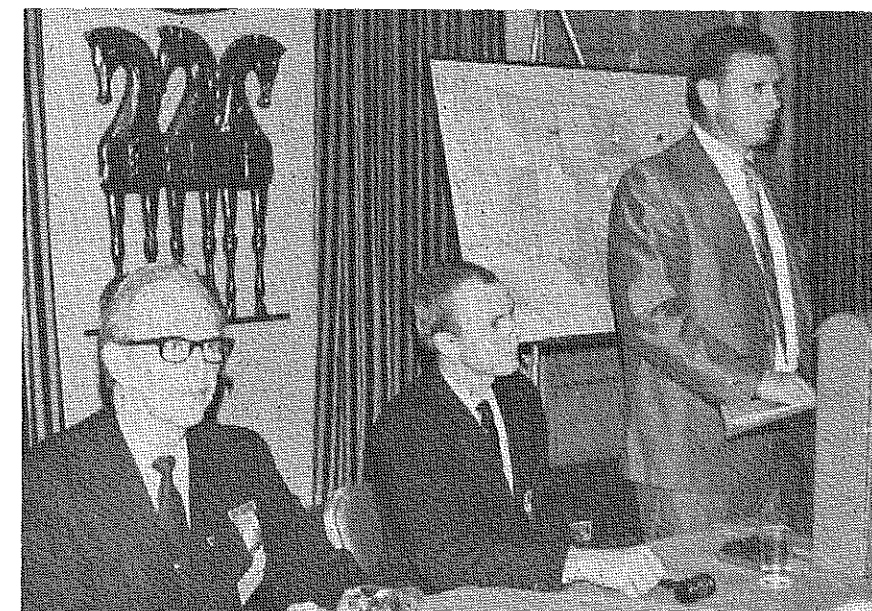


Eugene P. Barnes, Public Relations Manager, Massey-Ferguson, Inc., presenting the keys to a lawn tractor and mower to Grover C. Miehle (seated on the tractor), president of the Iowa Vocational Agriculture Teachers' Association at their summer conference work shop in Des Moines. The tractor was given to the instructors of IVATA in northeast Iowa for their high percentage of participation in the workshop. The equipment will be rotated among the schools in the district. Dr. Thomas Hoerner, Iowa State University, has developed a classroom and laboratory exercise on small power equipment for use with the machine. (Photo by Grover C. Miehle)



Dr. Kenneth James (right), National President of ATA, Illinois State University presents honorary degrees (left to right) to Dr. Carroll V. Hess, Dean, College of Agriculture, Kansas State University; Mr. Don Kimmel, Marketing Coordinator, Funk Brothers Seed Company; and Mr. Millard Gundlach, President, NVATA from Montfort, Wisconsin. (Photo by Martin B. McMillion, National Secretary-Treasurer, ATA, University of Minnesota)

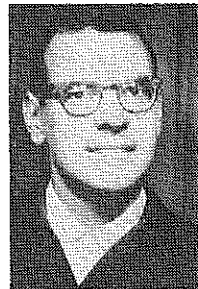
Dr. Edwin L. Love (right), University of Arkansas, accepts position of 2nd Vice President of the National Alpha Tau Alpha at the National Conclave held in Kansas City. Dr. Kenneth James (left), National President and Kenneth Jorstad, Student Chairman of final session, both from Illinois State University, look on. (Photo by Robert W. Walker)



View of 1970 Alpha Tau Alpha delegates at one of their sessions (below).



1968 NEW YORK AGRICULTURAL GRADUATES: THE FIRST TWO YEARS¹



Arthur L. Berkey
Assistant Professor of Agricultural Education
Cornell University, Ithaca, New York

Product evaluation is receiving increased emphasis in vocational education and rightfully so. The key to improving vocational programs is continued assessment of program effectiveness which means follow up of graduates in the world of work. Process evaluation procedures typically used in the past have a useful function, but the "proof of the program" is in the product.

A two-year follow up was made of all 1968 New York State secondary agricultural graduates who had completed two years of study in the same agricultural specialized area (farm production and management, conservation, agricultural mechanization, or ornamental horticulture) and their employers. Agribusiness graduates were excluded due to their limited number. Data was gathered on occupational status, relevance of training, agricultural images, and job satisfaction. Data reported are for the second year. Unless otherwise noted, the second year data do not differ markedly from first year findings.

Findings for All Graduates

1. Thirty-nine percent of all graduates were employed, 31 percent were in military service (up 4 percent from the first year), 27 percent were in college, 1 percent were attending other post-secondary education, and 2 percent were unemployed.

2. Over twice (36%) as many farm production and management graduates attended college as did graduates of any of the other three specialized

areas. This may be because the farm production and management programs have been established for a long period of time and therefore is better accepted by college bound students. Another reason may be that more farm production and management programs are offered in local schools, than are programs in the other specialized areas, where they can be scheduled by students taking a college preparatory course. Another causal factor may be that graduates of area vocational centers, where most of the conservation, agricultural mechanization, and ornamental horticulture programs are offered, were selected for enrollment on the basis of lower academic interest and/or ability, and definite vocational plans for employment following graduation.

3. A large percentage of graduates did not receive training in the same specialized area of agriculture in both their junior and senior years. This may be due to the number of new programs, enrollment limitations, and/or organizational changes in occupational education offered by Boards of Cooperative Education Services (BOCES).

4. Two-thirds or more of all graduates have a positive image of farming and a higher image of off-farm related agricultural industry. The mean image scores held by graduates in the different specialized areas were almost identical for farming and similar for off-farm related industry. Non-employed graduates held slightly higher images than did employed graduates.

5. Fifty-two percent of the graduates had future occupational plans for farming or an off-farm related agricultural occupation, 28 percent were uncertain, 20 percent planned to enter a non-agricultural industry, and 1 percent planned to go into service.

Findings for Employed Graduates (39 percent of all graduates were employed)

1. Ninety-eight percent of graduates seeking employment were employed.

2. Graduates were employed in a wide range of job titles.

3. Informal methods were typically used to obtain employment. Only 1 percent of the graduates reported obtaining their job through the U.S. or State Employment Service.

4. Fifty-one percent of the graduates reported employment in the area of agricultural specialization for which they were trained. The range was 67 percent for farm production and management graduates and 15-38 percent for graduates of other areas. Reasons given by graduates for not working in their area of training were "other job paid more" (34%), "liked work in other job more" (34%), "no job available" (31%), and "better hours" (18%). In conservation where 15 percent of graduates were working in the area for which they were trained, 50 percent of the graduates reported "no job available."

5. Farm production and management graduates were more likely to enter the area for which they were trained (i.e. farming) than were graduates of the other specialized areas.

This may be due to actual farm work experience leading to a more mature vocational choice, equity acquired in farming during high school leading to opportunity for self-employment, and/or opportunity for employment on the family farm.

6. Fifty percent of the graduates were working in the job they held at graduation.

7. Almost all (99%) graduates were qualified for their present job based on employer ratings.

8. At least one-fourth of the graduates needed additional training for their present job. This is evidenced by 25 percent of employers providing additional training to graduates.

9. Most graduates progressed in their present jobs. Two-thirds of graduates who were not self-employed reported having received a pay raise and 18 percent reported having been promoted. Thirteen percent of all graduates reported receiving wages above \$3 per hour as compared to only 5 percent the first year. This salary differential may reflect generally higher wage scale as a part of the economic situation.

10. Graduates were generally satisfied with their jobs. The most negative job satisfaction ratings were given by conservation and agricultural mechanization graduates regarding promotions available and pay received. Agricultural mechanization graduates had lower overall job satisfaction compared to the first year.

11. Employers and graduates agreed that there was a need for positive job attitudes and habits in the jobs held by graduates.

12. Most farm production and management knowledges and abilities were highly needed in the jobs held by farm production and management graduates. A majority of the knowledges and abilities in conservation, agricultural mechanization, and ornamental horticulture were not needed in the jobs held by graduates of these respective areas. This is as expected since a considerably higher percent of farm production and management graduates were employed in the area for which they were trained than were graduates of the other specialized areas of agriculture.

13. There were differences between the perceptions of graduates and their employers as to the need for agricul-

tural knowledges and abilities other than the job attitudes and habits. There were also differences between employers and graduates in the relative ranking of individual knowledges and abilities.

14. There is no statistically significant relationship between a graduate's image of agriculture and his job satisfaction.

Conclusion

The two-year occupational status data of 1968 secondary agricultural graduates from this study indicates that occupational programs in agriculture in New York State secondary schools are successfully preparing graduates seeking employment.

Recommendations

1. Follow-up of graduates should continue over a period of years to determine the continuing occupational patterns.

2. Increased and continued cooperation is needed between secondary school personnel and employers concerned with occupational education in agriculture to identify the agricultural knowledges and abilities needed by graduates for employment.

3. Task analysis research is needed to identify the agricultural tasks performed in the wide range of jobs in which graduates were employed.

4. The secondary agricultural curriculum should continue to include, at an increased level of emphasis, education for positive job attitudes and habits, and job search skills.

5. Research is needed to identify the types and number of agricultural jobs available to graduates. It is ironic that many agricultural graduates trained for off-farm agricultural occupations are working in non-agricultural jobs while at the same time agribusiness reports a shortage of trained workers. Increased efforts are needed to match workers to jobs:

6. Research is needed to determine the relative efficiency of in-school versus out-of-school directed work experience for teaching agricultural knowledges, skills, and abilities.

¹The first year report was published as *The Relevance of Secondary Occupational Training in Agriculture to Occupational Patterns* by A. Berkey, W. Kelly, and D. Brown, Cornell University, Ithaca, New York 14850, June 1969. The final report for the second year is in press.

From the Book Review Editor's Desk

RURAL RECREATION FOR PROFIT by Clodus R. Smith, Lloyd E. Partain and James R. Champlin. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1968, Second Edition, 315 pp., \$7.25.

The book describes several recreational and leisure time enterprises in which rural people might profitably invest their money and time. These enterprises include vacation farms and ranches, campgrounds, picnic and sport areas, fishing waters, hunting areas, shooting preserves, scenic, historic and nature areas, and land-use rights and cabin sites. Using these enterprises as chapter titles, the authors discuss the demand, income potential, profitable additions, requirements and management of problems specific to the enterprise.

A portion of the book deals with the generalities of recreational enterprise selection, its planning, development, operation, maintenance and merchandising. The available technical and financial assistance is discussed as well as basic management principles. The book is a definite improvement over the first edition.

The book is well illustrated with pictures and plans for the various structures pertinent to the specific recreation enterprise recommended. Each section contains its own bibliography for ready reference should one need to go to the basic document.

The authors are well qualified to write in the area of rural recreation.

This book is recommended for secondary and adult programs. It will serve well as a reference for two-year post-secondary programs.

William Annis
University of New Hampshire

LIVESTOCK JUDGING AND EVALUATION by W. Malcolm Beeson, Roger E. Hunsley, and Julius E. Nordby. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1970, 404 pp., \$7.50.

The text is divided into five areas, each of which treats a different class of livestock: beef cattle, sheep, dairy cattle, swine, and stock horses. The material is presented with expertise in a progressive style and includes 300 illustrations, charts, and tables to describe the modern types of slaughter and breeding animals. There are photographs that help to illustrate the points brought out in the discussion. Considerable space is devoted to the influence of type upon carcass merit and to the factors that are recognized in the judging of the unshorn fleeces.

The content covers the aspect of giving oral reasons. An extensive list of descriptive and comparative terms is included for each kind of livestock discussed. The terminology has been prepared to acquaint the reader with terms that are used in judging and evaluating the classes of livestock.

This book is designed basically for students of agriculture who are interested in learning the art and science of livestock judging and evaluation and a manner of giving oral reasons. This text could be used with students ranging from high school through college. For vocational agriculture, the writer envisions its use as a reference rather than as a text. It might be read and studied with a great deal of profit by anyone interested in livestock.

O. Claude McGhee
West Virginia University

POPULATION, RESOURCES, ENVIRONMENT by Paul R. and Anne H. Ehrlich. San Francisco, California: W. H. Freeman and Co., 1970, 383 pp., \$8.95.

This publication is an excellent reference book for concerned citizens. Teachers will find this book valuable in teaching environmental science and related social scientific issues. A teacher's guide is available for use with the book.

The book is organized into chapters, designed to put into perspective the complex relationship of population, the limits of the earth, environmental threats, ecosystems in jeopardy and social, political and economic change.

A bibliography is presented plus six important appendices.

Every teacher should review this book as a potential addition to his school and personal library. It is a valuable instructional source reference. Teachers will find this publication provides both facts and a sensitivity to the problems of man and his environment.

Gerald R. Fuller
University of Vermont

MISCONCEPTIONS CONCERNING VO-AG STUDENTS



Robert L. Haynes
Ph.D. Fellow, Department of Horticulture
Purdue University, Lafayette, Indiana

Many high school vocational agriculture students are experiencing a great dilemma about education in agriculture in general, and specifically, its prospects as a future livelihood. Many high school students are avoiding or abandoning the course of vocational agriculture because of the many misconceptions that are associated with the students in the curriculum.

During a panel discussion that was titled "Some Benefits From Taking Vocational Agriculture: My Personal Views," five misconceptions were identified.

Data collected from students in 10 high schools located in diverse sections of Mississippi indicated these responses:

Statement	Percentage range	Mean
1. Agriculture and farming are synonymous	60-100	82
2. Students electing vocational agriculture are scholastically incompetent	77- 97	87
3. Vo-ag students are physically unpleasant	63- 93	76
4. Vo-ag students are less competent in expression of ideals as compared with other students	70-100	92
5. Vo-ag students have less aspiration for training above high school	70- 93	84

Implications

These misconceptions about students of vocational agriculture are common

among many students in the State of Mississippi and, I surmise, in other parts of our nation. These misconceptions concerning high school Vo-Ag students pose a problem in recruitment of students. I believe that an orientation unit will combat some of these misconceptions linked with Vo-Ag students, but it must be borne in mind that these misconceptions are not as insignificant as many teachers, counselors, principals, and superintendents advocate. Rather, these misconceptions have been on the scene for quite some time. Therefore, many students as well as school personnel have become brainwashed to accept these misconceptions as facts. These misconceptions are deeply held, so much so, it will take considerable education to eradicate, or at least, upset these myths.

A Solution

To combat, or to some degree, inhibit the spread of these misconceptions concerning Vo-Ag students at Durant Attendance Center (Mississippi), the following means were adopted as part of our teaching program:

1. Seminars were held in which teachers, counselors, principals, and superintendents were urged to be present. The purpose of these discussions was to enlighten

the school personnel that these misconceptions were myths and not facts.

2. The school counselors were urged to alter their tactics in advising students to elect vocational agriculture. It was brought to light that in previous years, the guidance counselors urged only students with low grades to pursue the course of vocational agriculture.
3. The Department of Vocational Agriculture sent leaflets explaining these misconceptions to parents and other community officials.
4. Discussions were held at PTA meetings.
5. An orientation unit outlining these misconceptions and describing their non-validity was developed.
6. These misconceptions were discussed at local and district FFA meetings.

These means of shedding light on the nonvalidity of the misconceptions concerning Vo-Ag students have rendered some control in combating this dilemma in our school and district. But this fight only depicts a thimble of success in diluting the concentration of these deeply held credences.

INTEREST OF TWO ETHNIC GROUPS IN ORNAMENTAL HORTICULTURE



Elmer Wright, Jr.
4-H and Urban Youth Specialist
University of Illinois

The Vocational Education Act of 1963 and the 1968 Amendments have greatly expanded the opportunities for student enrollment in Vocational Education, as well as the broadening of the scope of Vocational Education. Vocational programs in ornamental horticulture are being developed in some Illinois junior colleges. For many pupils, a sound foundation in ornamental horticulture at the high school level will serve as preparation for specialized training at the post-high school levels for the many jobs in the field which require post-secondary preparation.

There are various manpower needs in ornamental horticulture businesses. Some of the jobs are provided by floral shops, garden departments of retail establishments, tree service firms, spray service firms, seed houses, horticulture equipment stores and shops, highway departments, landscaping firms, and sod farms.

The Study

This study investigated the levels of interest of different ethnic groups in ornamental horticulture. There were two ethnic groups in the study — black and white — and three socio-economic levels — lower, lower middle and middle.

Findings

Three variables had a significant correlation with interest in ornamental horticulture. There were adequate paying jobs in ornamental horticulture oc-

cupations. Not all of the jobs in the area of ornamental horticulture were menial. Therefore, black people ought to be educated in the area of ornamental horticulture.

The problem was twofold. Part one of the problem was to determine the profile of pupils who were involved in the study: (1) socio-economic level; (2) personal data regarding background; (3) and interest in the area of ornamental horticulture. Part two of the problem was to ascertain the responsibility that black and white employees have in the area of ornamental horticulture.

Six data-gathering instruments were used. They were a vocational agriculture interest inventory, an ornamental horticulture interest scale, an occupational rating scale, a pupil data record form, an employee evaluation questionnaire, and an employee personal information form.

Interview schedules were constructed to assess variables related to the ornamental horticulture occupation. Interviews were held with the horticulturalist and 18 Chicago Park District workers who were employed at Garfield Park Conservatory.

White pupils had a greater interest in agriculture than the black pupils. The attitude of the black pupils appeared to be negative toward the items in the Agricultural Interest Inventory. Black pupils in the middle socio-economic class had a greater interest than the lower class and the lower middle class blacks, yet the black pupils did not reach the middle interest range on the Agricultural Interest Inventory.

Interest Pattern

White middle class pupils had a greater interest in ornamental horticulture than the whites of the lower or lower middle class. White pupils had a higher interest rate on the ornamental horticulture interest scale than black pupils from the same social classes.

Summary

To summarize, the interest of whites was greater than the interest of blacks in most of the socio-economic levels. Black people should be informed and educated in the area of ornamental horticulture.

Unemployment has been of vital concern at the federal, state and local levels for many years, because of the ever-changing kinds and types of occupations which exist in the United States.

The problem of joblessness is of paramount importance among black people. The biggest jolts to the unemployment rate come in September and June with the opening and closing of the school year.

Teen-agers getting out of school accounted for about 1 million of the 1.3 million persons added to the unemployment rolls in June 1969. Some 2 million teen-agers joined the labor force, but only half of them found jobs.

The Bureau of Labor Statistics' report indicated virtually no changes in seasonally adjusted rates of unemployment for adult men, married men and teen-agers. The white jobless rate, which had been rising steadily since December 1968, fell from 4.6 percent to 4.2 percent in June 1969.

For Negroes, the jobless rate rose from 8 per cent to 8.7 per cent, returning to its April level after a dip in May. Much of the black unemployment exists, not because jobs are not available, but because employees are often unable to accept jobs or, for some unknown reason, they are unwilling to accept them.

Vocational programs in ornamental horticulture are being developed in some high school and junior colleges. There are various kinds of jobs and many vacant jobs in ornamental horticulture businesses.

The problem was to determine whether or not there was an interest in ornamental horticulture of different ethnic groups by socio-economic levels; to determine whether or not there was a need to inform certain ethnic groups regarding the jobs involved in ornamental horticulture; to determine how the interest level in ornamental horticulture differs among the ethnic groups; and to determine the differences in interest by socio-economic levels of different ethnic groups.

In formulating a program for employment in ornamental horticulture for black people, the following factors should be considered: (1) socio-economic status of pupils; (2) whether there is an interest in ornamental horticulture among blacks; and (3) whether their interests differ by socio-economic levels.

Unuru Ya Kenya Kazi Kwa Ukulima

(FREEDOM FOR KENYA --- WORK THROUGH AGRICULTURE)



J. Martin Reid
Supervisor of High Schools
Prince Frederick, Maryland

The educational system of Kenya has its foundation in the missionary movement of the early 1900's and is structured by British colonial educational philosophy. With but little more information than this, the author embarked upon an experience in teaching, that proved to be the most rewarding and challenging opportunity of his professional career.

Kenya is a small country, about the size of the state of West Virginia, on the east coast of Africa. Essentially an agricultural country, 40% of the Gross Domestic Product and about 60% of her total exports are derived from agriculture. Of the country's 10 million people, 7 million depend directly upon agriculture for their livelihood.

Kenya has a great agricultural potential but if she is to develop it, she must increase the level of knowledge and competencies among her own people — people who have maintained their primitive ways of life — people who have looked upon agriculture as women's work, degrading and beneath the dignity of the warrior. Subsistence practices must be replaced by approved production practices. Men must supplement, if not replace the woman on the shamba (farm). A new concept is essential. Kenya must break the ties of the past; she cannot afford an educated elite.

A New Concept: Based upon an earlier program of agricultural education integrated into a mission school and the framework of a government seeking self realization as a newly

independent nation, a new attitude toward the goals of education is beginning to form. This new attitude is best expressed by this statement of the Kenya government: "What we now need to realize is that a feeling for precision is a necessity for life in this modern world and that the lack of it is a barrier to the means of training muscles and perception so as to surmount this barrier." Thus was born a philosophy of education into which vocational agriculture would fit and the birth of a program that would shake, if not cause to crumble, the concept of an educated academic elite.

The concept of vocational agriculture was implemented in Kenya through a contract between the government of Kenya, U.S.A.I.D. and West Virginia University. The objective: to make a rural secondary education more practical and responsive to the developmental needs of the country and to accomplish this by providing the technical advice and assistance in teaching and developing courses of agriculture for six rural boarding schools — not an easy task in a society where the work of the farm is the responsibility of women.

Upon arrival at the school, the author was introduced as Bwana Kilima which means Mr. Agriculture. The students were told that they would be given the opportunity to study agriculture as they did biology, chemistry or physics, but it took more than the mere introduction to convince these young

men that there was anything scientific about "digging the garden" that could be considered equal to their regular academic program.

The first few months were spent in open discussion of science in agriculture. Movies served as good foundations upon which to discuss better methods. For awhile, each Saturday night was utilized to present the story of U.S. technology in agriculture. The U.S. Information Service Film Library was hard pressed to locate and keep the school supplied. Everything from the FFA Star Farmer of 1962 to the John Deere Power Train was used.

Gradually, as the work began on the classroom-shop building, the equipment began to arrive and the course content was improved students began to show interest. Of course, the opportunity to drive the shiny new tractor and to use the pieces of magical equipment (soil test kit) and to read those beautiful books with the pictures helped to create this interest. Another factor of significance was the willingness of the mzungu (this white man) to work with his hands in the soil.

Within the first year, the school demonstration area, about five acres, was prepared and planted using the magical powder (fertilizer) and approved methods. Since the methods used were strange as well as the equipment, it wasn't hard to have the students do the work. They proved eager and willing and soon were convinced that this type of agriculture was not the work of women but man's work.

The shamba (farm plot) size expanded as well. New crops were added to the staple crop of maize. Fortunately the climate was favorable and good harvests were possible. Also, the fruits of their labor were used in the dining hall. Not only were they eating better, they were eating more. The program grew; a poultry project was started, and soon an egg each week was added to the diet. The farm grew to twenty-five acres and a Young Farmers Club (comparable to the FFA) was initiated. Students learned judging and began to compete with the previously all European schools and began winning the first places in competition. In 1966, an African Young Farmer Club was announced as the most outstanding Young Farmer Club in Kenya, and it has remained so each year since.

Time is running out on the West Virginia/U.S.A.I.D. contract. Students have been successfully examined in the new subject of agriculture. Local teachers have been trained to phase out the U.S. technicians and are working with enthusiasm. Today, the young

men of Kenya can be seen working on their shambas, showing their cattle at the agricultural shows and seeking places for further education in the science of agriculture at the university. Today, in Kenya, agriculture is man's work.



Students of the Njoro School discuss pollination and hybrid vigor with their teacher, Joseph Marungi and the author, J. Martin Reid.



A member of the Kenya Agricultural Society presents a trophy for the winning Young Farmer exhibit to a Njoro student.

OPPORTUNITIES AND REQUIREMENTS FOR FARM MACHINERY MECHANICS



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Among the many complex problems confronting farmers today is one that is almost unknown except to those within the farm machinery industry. The problem is simply this — how can the production of food and fiber be increased or even maintained unless an adequate supply of qualified mechanics and other service personnel is available to keep farm machinery in operation? It would appear that unless steps are taken to solve this problem, unrepaired farm machinery may cause a creeping paralysis of farm production.

At the request of implement dealers of Texas in 1965, the Vocational Division of the State Department of Education established a two-year course of study in vocational agriculture for training high school students to become

farm machinery mechanics. Two problems were immediately identified, (1) what need existed for mechanics and related personnel, and (2) what knowledge and skills should a person possess to enter the trade with some assurance of satisfactory progress? To solve these problems, research, sponsored jointly by the Occupational Research Coordinating Unit of the Texas Education Agency and the Texas Agricultural Experiment Station, was conducted by the Department of Agricultural Education at Texas A&M University.

The purpose of the study was to identify the opportunities and requirements for entry into the farm machinery mechanics trade. To accomplish this purpose, two interview schedules were developed. One consisted of items re-

lated to opportunities for employment in the trade and the other identified competences needed for successful entry into the trade. Teachers of vocational agriculture conducted the interviews with owners of farm machinery businesses and with managers of service departments. The major findings of the study are:

1. An acute shortage of farm machinery mechanics exists in Texas. Eighty-eight percent of the businesses participating reported mechanics to be their greatest labor need. The estimated number needed immediately and within the next five years exceeded 7,000.

2. Partsmen represented the second greatest need as reported by 58 percent of the farm machinery businesses participating. The estimated number need-

ed immediately and within the next five years exceeded 3,600.

3. The average workweek for mechanics was approximately 48 hours. The average wage reported for top mechanics per week was \$119.65 or approximately \$2.50 per hour. The average wage for a beginning mechanic was slightly less than \$75.00 or about \$1.50 per hour.

4. The minimum age for hiring mechanics was 18.

5. Most managers preferred that mechanics be high school graduates.

6. No formal programs were sponsored within the farm machinery service and repair shops for training unskilled persons to be mechanics; however, it was found that a person with basic knowledge and skills can advance through informal means provided by shop personnel, usually by being assigned to work with a master mechanic.

7. It was estimated by service managers that 2.5 years of on-the-job training would be required for a person to become a mechanic who could work without close supervision.

8. A majority of managers preferred that employees have farm or ranch backgrounds.

9. Almost 95 percent of the participating managers stated they would like to see local high schools develop programs for training mechanics. Of these, almost all stated they would assist schools with such programs.

10. Personal attributes believed by service managers to be required for success in the trade were: desire, aptitude, pride in workmanship, respect for tools, cleanliness of work areas, and cleanliness of person.

11. Safe work habits were the most important skills a mechanic should possess.

12. The ability to use tools was rated as the second most important skill a beginning mechanic should acquire. Rated at the same level was the ability to read and interpret operator's manuals and technical bulletins.

13. Beginning mechanics who have a balance between functional understanding of mechanical units and the ability to service and repair units were preferred by the service managers. However, if a choice had to be made, it would be in favor of an understanding of units and their relationships.

14. Service managers recommended that programs for training mechanics

should begin with the engine and ignition system followed by lubrication and fuel systems, electrical systems and instruments, power trains, and hydraulics.

Recommendations

The following recommendations were made to implement the conclusions reached in analyzing the data in this investigation:

1. Concerted efforts should be made to encourage young men to select a career in the mechanics trade.

2. Persons selected to be trained as mechanics should demonstrate the aptitude to become competent workmen through appropriate tests and other measures.

3. Efforts should be made jointly by educators, industry, and other groups to expand programs for training mechanics.

4. Programs for training mechanics should be staffed with persons who have trade competence and who understand the nature of the farm machinery industry.

5. Courses of study developed to train mechanics should include experiences designed to develop the personal attributes needed by persons competent in the trade.

OCCUPATIONS OF MALE GRADUATES OF THE MONTICELLO COMMUNITY HIGH SCHOOL



*Grover C. Miede
Vocational Agriculture Instructor
Monticello, Iowa*

This study was of 236 farm-reared male graduates of the Monticello Community High School, Monticello, Iowa, from 1950 through 1962.

Ninety-two percent of the farm-reared male graduates were sons of farmers, 3 percent were sons of businessmen, and 5 percent had fathers who were in crafts and industry. Twen-

ty percent of the graduates entered professional occupations, 26 percent were engaged as farm operators and farm laborers, 17 percent were in services, 14 percent were craftsmen, and 11 percent were in clerical and sales occupations. A total of 55 percent were in farming and agricultural related occupations.

Migration

Fifty-four percent of the farm-reared male graduates remained within a radius of 30 miles of Monticello. Another 14 percent lived within a 30 to 60 mile radius with an additional 9 percent living beyond 60 miles but within the state of Iowa. Only 22 percent had migrated from the state.

A NET INCOME OF \$19,000 MAY NOT BRING JOB SATISFACTION . . .

Of those who had moved from the state, 45 percent were in professional occupations. None of the farm operators had migrated from the state.

Job opportunities were found within a 60 mile radius of Monticello by 98 percent of the farm operators, 25 percent of the professional workers, 85 percent of the craftsmen, and 70 percent of those engaged in services.

Data indicated that 10 percent of the graduates were farm renters, 9 percent were owner-operators, 5 percent were partners in the farm business, and 2 percent were classified as hired hands. An additional 28 percent were in agricultural related occupations.

Education of the Father

Only 6 percent of the graduates, whose fathers had less than an eighth grade education, attended college. Nearly 13 percent of the sons of fathers who completed 8th grade attended college for one to four years. Approximately 50 percent of the sons of fathers who were high school graduates attended college.

Sixty percent of the high school graduates did not attend college.

Size of Farm

Over 70 percent of the parents operated from 81 to 160 acres. Nearly 23

percent operated from 161 to 240 acres. Acres owned by the parents did not greatly influence the net income of the graduates. About 70 percent of the parents rented no land and 7 percent rented less than 80 acres. Fourteen of the 22 graduates with net incomes of \$13,000 or more were sons of parents who were farming 81 to 160 acres at time of graduation.

Rank in Class

Forty percent of the graduates ranked in the top 50 percent of their respective classes. The graduates in the first and second decile groups made up 11 percent. The eighth and ninth decile groups included about 15 percent each and the remainder of each decile group contained about 10 percent. About 50 percent of the first and second decile groups moved out of Iowa.

Fifty-three percent of those graduates in professions came from the top three decile groups, with 13 percent in the lower three decile groups. Twenty-five percent of the farm operators ranked in the top four decile groups, whereas 44 percent came from the lower four decile groups. The graduates earning under \$5,000 were approximately equally divided between the top one-half and bottom one-half of their classes. Graduates earning \$9,000 to \$12,999 were equally distributed in the top one-half and bottom one-half of their classes. The same division was found in income groups up to \$18,999.

A relationship was found to exist between the graduate's rank in class and the number of years of college attended. The upper one-half of the class accounted for 76 percent of those who attended 4 years of college.

Seventy-three percent of those who studied agriculture were ranked in the upper one-half of their classes. Sixty-five percent of all graduates who attended college were in the upper one-half of their classes, with 21 percent in the first and second decile groups.

The hired farm hands were in the lower 60 percent of their classes. Of the graduates employed in farm related occupations, only 32 percent had ranked in the upper one-half of their classes, with 9 percent in the first and second decile groups and 35 percent in the eighth and ninth decile groups.

About 50 percent of the graduates completed at least 4 semesters of science. Thirty-six percent of the farm operators completed 6 semesters of science. Fifteen percent had completed less than 2 semesters of vocational agriculture, with fifty-five percent completing 6 or more semesters of vocational agriculture.

Twenty-two percent of the professionals, 63 percent of the farm operators, 45 percent in clerical and sales, 50 percent of the craftsmen, 47 percent in services, and 33 percent of the non-farm laborers completed 8 semesters of vocational agriculture.

Of the graduates who had completed 8 semesters of vocational agriculture, 38 percent were farming. Eighteen percent were farm owner-operators, 8 percent were partners and 12 percent were renters. Thirty percent were in agricultural related occupations.

Participation in School Activities

Participation in Future Farmers of America was most extensive with 86 percent taking part. Other percentages of participation were: athletics, 61; music, 44; drama and speech, 23. Participation was less than 9 percent in student council, camera club, on the annual staff, on school paper staff and in the science club.

College Attendance and Income

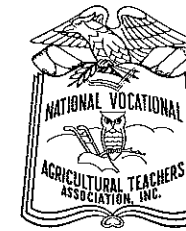
Nearly 40 percent of the graduates had some college training. Twenty-six percent attended 4 or more years of college. In the income groups of \$4,999 and under, 57 percent had no college attendance.

Approximately 12 percent of the incomes reported were over \$13,000. Of those in this group, 72 percent reported 3 jobs or less. Data revealed that 60 percent with net incomes less than \$9,000 and the group with incomes over \$13,000 had 2 or less different jobs since graduation.

Expressed personal satisfaction of the graduates in their occupations showed 44 percent were very satisfied, and 54 percent satisfied. Only 2 graduates indicated being dissatisfied with his occupational choice and 2 graduates were very dissatisfied. There was one graduate whose net income was over \$19,000 who was only satisfied in his occupation.

News and Views of NVATA

JAMES WALL
Executive Secretary



Newly elected officers of NVATA are: Glen McDowell, Pikeville, Ky., president; William Harrison, Leedeey, Okla., vice-president for Region II; Odell Miller, Raymond, Ohio, vice-president for Region IV. Sam Stenzel, Colby, Kansas, was re-elected treasurer.

Newly elected officers of National Association of State Supervisors of Agricultural Education (NASAE) are: Julian Carter, Vermont, president; Don Wilson, California, secretary-treasurer; Earl Killian, Oklahoma, vice-president from the Southern Region; E. W. Gustafson, South Dakota, vice-president from the Central Region; Ralph Edwards, Idaho, vice-president from the Pacific Region.

Newly elected officers of the American Association of Teacher Educators in Agriculture (AATEA) are: Gene Love, University of Missouri, president; Earl Carpenter, South Carolina State University, president-elect; Gerald Fuller, University of Vermont, vice-president for the North Atlantic Region.

Newly elected secretary-treasurer of the Agricultural Education Division of American Vocational Association (AVA) is James Clouse, Purdue University.

Dr. Lloyd Phipps, University of Illinois, received the Distinguished Service Award presented at the AATEA breakfast in New Orleans. Dr. Phipps, author of many books used in agricultural education, received a check for \$500 in addition to the citation.

A special word of thanks to Millard Gundlach, Monfort, Wisconsin, retiring NVATA president; Glen McDowell, Pikeville, Kentucky who was vice-president for Region IV and William Black, vice-president of Region II from Pioneer, Louisiana. Dr. Lowery Davis has served as Secretary-Treasurer of the Agricultural Education Division of AVA. Mr. T. L. Faulkner, Alabama, was the retiring president of NASAE and Charles Drawbaugh, Rutgers University, retired as president of AATEA.

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FEBRUARY, 1971

BOOK REVIEWS

PLANT AGRICULTURE by Jules Janick, Robert W. Schery, Frank W. Woods, and Vernon W. Ruttan. San Francisco, California: Freeman and Company, 1970, 246 pp., \$10.00.

Plant Agriculture describes the role of agriculture from the beginning of time. The domestication of wild cereal grains and animals for man's use is described in detail. The origin of corn and irrigation practices of early civilization are explained.

Plant growth and development is discussed in detail starting with chlorophyll and its role in photosynthesis and the chemistry occurring throughout the process. Increasing or decreasing plant growth is discussed. Hormones as a means of the self-preservation process of seed dispersal is covered in detail.

Plant development, as effected by light and soil classifications and locations in the United States, water and climate are surveyed in brief.

An analysis of production technology including conservation practices, reclamation of unproductive farm lands of the world, development of hybrids, use and value of chemical fertilizer, selective pesticides, agricultural mechanization and vineculture is included.

The world food needs are described along with problems associated with markets and marketing.

The book was authored by: Jules Janick, Professor of Horticulture at Purdue University, Robert W. Schery of Lawn University, holds a Ph.D degree in Botany, Frank W. Woods, Professor of Forestry at the University of Tennessee and Vernon W. Ruttan, Professor of Agricultural Economics at the University of Minnesota.

In my opinion, *Plant Agriculture* could be used effectively as a reference for agriculture students at the high school or community college level.

Max L. Amberson
Montana State University

ANIMAL SCIENCE by M. E. Ensminger. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1969, Sixth Edition, 1253 pp., \$14.95.

The sixth edition of *Animal Science* is a complete and comprehensive text which covers the total field of animal agriculture. There are chapters on beef cattle, dairy cattle, sheep and goats, swine, poultry and horses. There are eight chapters covering the general principles that apply to all classes of livestock, plus an appendix with valuable information. Previous editions did not contain sections on dairy cattle and poultry science. A highlight of this book is a chapter titled "Business Aspects of Animal Production." Items of value in this chapter are capital requirements for livestock, characteristics of the livestock manager, use of the computer in the livestock business and future teaching with livestock.

In addition to a complete coverage of such areas as breeds, feeding, marketing, the industry and establishment of the herd or flock for each species of livestock, new aspects of animal science included are automation, environmental control, new breeds, the metric system, animal labor requirements, modern manure handling and pelleted rations for livestock.

The book is written in an interesting manner with many facts threaded throughout each chapter. Black and white pictures, graphs, diagrams and charts provide for variety. The subject matter has been updated to reflect the way farming has changed and new developments in animal science.

Dr. M. E. Ensminger, a well-known author and animal scientist, has served on the staffs of several universities and the United States Department of Agriculture. He knows animal science and understands the needs and interests of his readers such as students and farmers. This edition of *Animal Science* is comprehensive, understandable and practical.

This book may be used as a reference book or a text for high school vocational agriculture classes in animal science or beginning classes at the college level. It also would serve as an encyclopedia for animal science.

Harold R. Crayford
Iowa State University

NEWS TO ME

GLEANINGS BY YOUR EDITOR

Vocational Education Week is February 7 through February 13. What are you doing to promote your profession?

The U.S. Office of Education estimates that the United States needs 15,000 more vocational teachers today and by 1975 the figure could grow to 75,000. This number will be needed to give instruction to the 17.2 million expected enrollment in vocational classes.

The number of individuals qualified to teach vocational agriculture increased by 70% from 1965 to 1970 but only 50% of those qualified in 1970 entered teaching. This is the smallest percent in 5 years according to Ralph Woodin, The Ohio State University, chairman of the AATEA Committee on Teacher Recruitment. There are some states which qualified an abundance, while other states failed to qualify sufficient teachers. However, only 10% of the teachers qualified in 1970 crossed state lines for employment.

Twenty-one percent of the total AVA membership is in the Agricultural Division. C.M. Lawrence, Administrator, Agricultural Education, State Department of Education, Florida continues as president of the Agricultural Education Division of AVA.

The 1970 AVA Convention, held in New Orleans, December 5-9, 1970, had the highest registration of any national convention ever held. Over 400 separate meetings were scheduled during the convention. C. L. Mondart, supervisor in Louisiana, was convention program chairman for the Agricultural Education Division.

There is great confusion existing today as to what is agriculture. Talk to

people about agriculture and some don't know what you had in mind. Some think it is only farming. A point many people miss is that farming and agriculture are not always synonymous. Agriculture is the business of putting 205 million breakfasts, 205 million lunches, 205 million dinners — 615 million meals a day on the table for 205 million Americans. Out of every 100 jobs in private industry, 33 are related to agriculture and food.

The opportunities in agriculture are so numerous that the most important criteria for the man or woman seeking a career in this area is desire. The latitude of available jobs in our industry are so great it is likely a prospect has the necessary aptitude to fill a niche somewhere. The most important word in the last sentence is prospect.

Agriculture must convince talented young people both rural and urban, boys and girls, that we have challenging opportunities available. — Dr. M. R. McClung, West Virginia University in *Food and Agriculture in West Virginia*.

The 1971 AVA Convention will be held in Portland, Oregon December 3-8.

Over \$26 million of federal funds were spent for vocational education in 1969. This was 12.8% of the total federal appropriation for vocational education, or an average of \$20.57 per student. Total enrollment in agriculture was 850,705, or 10% of the total number of students. Thirty-four percent of the total enrollment were in adult classes.

A mailing directory of post-high school programs in agriculture has been compiled by Maynard Iverson, Research Associate in the Department of Agricultural Education of The Ohio

State University. Entitled "1970-71 Directory of Post-Secondary Education in Agriculture and Natural Resources Occupations," the publication lists, by states, the name and address of the institution, the agricultural programs offered and the individual to contact for information. A copy of the publication is available from the author or through The Ohio State Agricultural Education Curriculum Materials Service, Room 201, 2120 Fyffe Road, Columbus, Ohio 43210.

Our amazing farm productivity is the chief reason for our national affluence. According to *Farm Journal*, the fact we can spend 86¢ out of every dollar of personal income for things other than food allows us to support a wide range of consumer goods and services. We can pour money into education, the arts, household appliances, automobiles, sports, housing, highways, airplanes, electrical power, hospitals and many other activities in amounts that beat any other country.

Farmers are industry's best customer using each year 1/3 as much steel as the automobile industry; enough rubber to put tires on 85% of the new cars and more petroleum than any other industry. Farming employs more people than any other industry and is the biggest customer for the products of the nation's workers. — Editorial in *Oct 1970 Farm Journal*

A survey in Alabama showed 13,300 annual employment opportunities in agri-business in their state. Last year Alabama graduated 4,580 students in vocational agriculture at the secondary level. There must be opportunities for employment in Alabama for a lot of people with limited training. Who said there wasn't any future in agriculture?