A NEW SPECIAL EDITOR

A new feature in Agricultural Education Magazine will be the presentation of reviews of research. Dr. J. David McGarvin 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 18-29. Five thousand observed a ceremony honoring the Regional State Star Farmers and Agriculturalers 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 simple concept. Cost $22.00 each or $20.00 for the horticulture series of 10 and $150.00 for the animal science series of 8.

WORK EXPERIENCE ABROAD (WEXA), 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, 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 ends either 6 months. Students receive board and room plus a stipend for living and with the host family. Basic costs to the individual are approximately $2900 for South America, $3500 for Europe and $4000 for Oceania. For additional information, write to: National FFA Center, P.O. Box 15160, Alexandria, Va. 22306.

Changes from the traditional pattern of inservice 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 85-90% of the school graduates before entering the world of work and adult living.


LEXINGTON, KY 40505

HANCOCK INLAND

March 1971
The Importance of Placement and Follow-Up

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 the 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 efforts. We must see that teachers are paid for this important function.

The Importance of Placement and Follow-Up

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

Teachers, supervisors and teacher educators are searching their minds in an attempt to cultivate 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 basic principles and more generalities but include material on justifications, interrelations, problem solving and job opportunities. The general consensus for the latter group has been the leadership and their published guides. These manuals may show adherence to tradition or hold departures which meet resistance from the traditions-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 students, 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 important. 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 gains on a favorable opportunity for employment in farming. Less than 2/3 of the working population will have opportunity to become a farmer. Accept the fact but consider the concept. Very percent of the working population is employed in occupations associated with agriculture. Forget the clamor for farms or credit and do away with your fear of not being able to make progress in a position. All students should be aware of the opportunities in agriculture. He may be a design engineer for a tractor or truck manufacturer. Working with experimental animals, one may be a weather forecaster for a TV or radio station. A credit man in banking or insurance. This is not a complete list. Many students of vocational agriculture in the stations of employment, do not become as engrossed in the battle to gain recognition that you overlook the many chances open to you in many branches of 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 or a labor counselor and we individuals in business and industry. Test scores, aptitude tests, opportunity to observe working conditions and to attend training sessions need to be considered through attempts to put together as he thinks of his future. Does he have the emotional stability, is his personality adaptable to the nature of the job? What is his capacity for supervision 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 running of a time clock? Does he possess the physical demands of labor? Not only must the individual know the demands of various jobs but he must assess his own qualifications for each.

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 was applied to a specific goal. 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 attend school 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 begins his 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. Young people are being asked to make critical decisions early in life. It is essential that we give them the tools to make those decisions.

4. A STUDENT SHOULD DEVELOP A PLAN TO ACHIEVE HIS GOAL. Young people have the 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 and mathematical knowledge at the college level. Each mistake he makes may be costly in time and money, even to the point of dismissal and discouragement or even abandonment of his program.

5. THE TRAINED INDIVIDUAL MUST BE PLACED IN A FAVORABLE WORKING SITUATION. In recent years vocational agriculture has made great strides in the development of the trade and business. It is not without 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 build operations. Therefore the number of replacements needed are a concern to the farmer’s market progress in a position. All students should be aware of the opportunities in agriculture. He may be a design engineer for a tractor or truck manufacturer. Working with experimental animals, one may be a weather forecaster for a TV or radio station. A credit man in banking or insurance. This is not a complete list. Many students of vocational agriculture in the stations of employment, do not become as engrossed in the battle to gain recognition that you overlook the many chances open to you in many branches of opportunities to youth in acquainting them with the world of work.

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 level.

Mr. 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 Lou 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 1951, 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 1957.

Dr. Hardwick has taught in the Bakersfield, 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 Representative, 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 Airplane Company and McNally Manufacturing Company. He has also worked in research data processing with the RCA Corporation. He has been a member of the positions of Education Systems Manager and Assistant Manager, Education Marketing and National Account Manager (Education), and Manager of Educational Systems Planning.

Mr. Faulkner attended the University of Alabama, where he studied electrical engineering for two years; studied methods of teaching and industrial arts at New Mexico State Teachers College for a year; received his B.S. degree in vocational education at Mississippi State University; and received his M.S. degree from Auburn University, majoring in vocational education.

A licensed pilot and mechanic, Mr. Faulkner, over the years, has managed his own flying school. He is currently a weekly newspaper, editor and publisher of a rural aviation school, newspaper and add life insurance.

His experience in vocational teaching and supervision includes three years of teaching industrial arts in Silver City, New Mexico; one year as superintendent of Bond Vocational High School in Louisville, Mississippi; five years of teaching vocational agriculture in Fayette, Alabama; 16 years as assistant state supervisor and 13 years as state supervisor of vocational agriculture.

Dr. Earl T. Carpenter, a strong advocate of innovative curricula 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.R. Research Coordinating Unit for Vocational Education, an agency established on the campus in 1966.

Carpenter says the range of vocational education has improved immensely in recent years. He believes public information for vocational and technical education and its willingness to support them is 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.
WHERE ARE YOUR MALE GRADUATES EMPLOYED?

Howard L. Poitier
Vocational Agriculture Instructor
West Union, Iowa

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 Poitier and Gerald Lammers 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 thus:

1. Follow-up studies and placement should be viewed as a component of a larger system of studies—namely, 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, and elements of the program 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 mand[ed] out-of-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 educational system along different paths.

5. Most studies attempt to evaluate the educational programs of vocational and general education in terms of the organization of the educational system. Little research, if any, reports on persons who leave 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 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 of service by use of statistical averages.

9. An error in many studies is the inference of causal relationship between variables when either no data or method applied does not warrant the inference. This is methodological and logical error and which research in many fields.

10. The basic weakness 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 Advisory Council on Vocational Education, 1968.

"Effective occupational preparation is impossible if the school fails to state 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 strengths and weaknesses."


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of the graduates who responded, 56 (18.5 percent) were employed in off-farm agricultural occupations and 191 (65 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 (.6723) between students 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 graduates 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 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 area 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 facility can be provided on a practical and economical basis.
The occupations of vocational agriculture graduates

Thirty-five percent of the graduates had remained within the area served by the school district. The area with the highest graduation rate was in the middle of the state, with approximately 25 percent of the graduates having left the state.

Factors related to graduates' occupations

Of the 163 graduates, 48.3 percent had found work in agriculture, 23.1 percent in manufacturing, and 16.8 percent in business and sales. A total of 5.2 percent were unemployed.

Among the graduates, 48.3 percent had found work in agriculture, 23.1 percent in manufacturing, and 16.8 percent in business and sales. A total of 5.2 percent were unemployed.

The agricultural occupations included farming, livestock care, and related activities. Manufacturing occupations included production, sales, and administrative positions. Business and sales occupations included sales, marketing, and management.

Students who had completed their studies in agriculture had a better job outlook than those who had completed their studies in other fields. This was due to the increasing demand for agricultural professionals.

For more information, contact your local agricultural education center or visit their website.

1. The agricultural occupations are in high demand due to the increasing need for food production.
2. The manufacturing occupations are in high demand due to the expansion of the industrial sector.
3. The business and sales occupations are in high demand due to the growth of the service sector.

For more information, contact your local agricultural education center or visit their website.
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 does yield information about the educational product that is essential for continuous evaluation. In discussing the use of follow-up studies that require contact with individuals who have shared an experience in the past, Sharp and Kraninger 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 those 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 forward momentum 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 1966 and 1969 graduating classes reflect the screening and selection procedures that were instituted 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 classroom and personal interviews. The 22 percent not completing in the 1970 class was influenced by the fact that most 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 coordinates and maintains the on-the-job employment opportunities available to graduates. Employment placement of graduates had 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, 85 percent entered the field for which they were trained or a closely related field within four months following graduation. The "closely related field" refers to graduates who were employed full-time in an agricultural equipment dealership.

The increase in salary from initial employment until the time of the study shows that graduates are succeeding in 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 within two years. Most of the graduates secured employment in their chosen field and have successfully advanced in their jobs, either directly or closely related to their training.

Table 1

<table>
<thead>
<tr>
<th>Program Years</th>
<th>No. of Students</th>
<th>No. of Students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965-67</td>
<td>40</td>
<td>34</td>
<td>85</td>
</tr>
<tr>
<td>1966-68</td>
<td>44</td>
<td>40</td>
<td>90</td>
</tr>
<tr>
<td>1967-69</td>
<td>46</td>
<td>41</td>
<td>90</td>
</tr>
<tr>
<td>1968-70</td>
<td>46</td>
<td>36</td>
<td>78</td>
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Table 2

<table>
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<th>Year Graduated</th>
<th>Occupation Related</th>
<th>Occupation Other</th>
<th>Military Service</th>
<th>Full-Time School</th>
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<tbody>
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<td>1967</td>
<td>59</td>
<td>32</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1968</td>
<td>73</td>
<td>7</td>
<td>3</td>
<td>14</td>
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<td>1969</td>
<td>42</td>
<td>39</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>1970</td>
<td>33</td>
<td>31</td>
<td>0</td>
<td>16</td>
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</table>

Table 3

<table>
<thead>
<tr>
<th>Year Graduated</th>
<th>Start Salary</th>
<th>Salary June 70</th>
<th>Start Salary</th>
<th>Salary June 70</th>
</tr>
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<tbody>
<tr>
<td>1967</td>
<td>40</td>
<td>20</td>
<td>12</td>
<td>64</td>
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<tr>
<td>1968</td>
<td>26</td>
<td>42</td>
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<tr>
<td>1970</td>
<td>15</td>
<td>73</td>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>

*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.

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This past Ya-Ag student (left) has established an excellent rescue enterprise through his farming program. He demonstrated his respect and appreciation for his Ya-Ag program by giving his FFA Cheater two gifts which are being accepted by a green hand, thereby starting a "pill chair." (Photos by John W. Santes, Mayville High School, Wisconsin)

Dr. Kenneth James (right), National President of AFA, Illinois State University presents honorary degree (left to right) to Dr. Carroll V. Heu, Dean, College of Agriculture, Kansas State University; V. Sam Kinney, Marketing Coordinator, Fatt Bros. Seed Company; and Mr. William Grayham, President, NAPA from Kansas City. (Photo by Morris B. McMillen, National Secretary-Treasurer, AFA, University of Minnesota)

Dr. Edward L. Luce (right), University of Arkansas, accepts position of 2nd Vice-President of the National Alpha Tau Alpha at the National Convention held in Kansas City, Dr. Kenneth James (left), National President and Kenneth Johnson, Student Chairman of final session, 1971 Illinois State University,kot on. (Photo by Robert W. Walker)

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

Raynor, P. Barrow, Public Relations Manager, Mootz & Ferguson, Inc., presents the keys to a 10-year tractor and owner to Everett G. Mikes, located at Clovis, California, president of the farm vocational agriculture education organization of the grade school students. The tractor will be utilized among the various activities of the district. Dr. Thad E. Hoover, Iowa State University, has developed a classroom and laboratory course on small power equipment for use with machinery. (Photo by Everett G. Mikes)
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 employment situations. Graduates were included due to their limited number. Data was gathered on occupational status, preferences 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 (39) percent of all graduates were employed, 31 percent were in military service (1 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. The reason for the higher percentages of specialized areas for which they were prepared.
3. Fifty-two (52) percent of the graduates had future occupational plans for farm or off-farm related agriculture occupations, 29 percent were uncertain, 22 percent planned to enter a non-farm related field.
4. This may be due to the fact that farm production and management programs have been established for a long period of time and therefore are 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.
5. 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 programs.
6. Most farm production and management graduates were enrolled in programs by the U.S. Department of Agriculture.
7. Farm production and management programs were in the same specialized area of agriculture in both their junior and senior years.
8. Most farm production and management graduates were in programs by the U.S. Department of Agriculture.
9. A majority of the graduates were enrolled in programs by the U.S. Department of Agriculture.
10. Graduates were often employed in programs by the U.S. Department of Agriculture.
11. Most farm production and management graduates were enrolled in programs by the U.S. Department of Agriculture.
12. A majority of the graduates were enrolled in programs by the U.S. Department of Agriculture.
13. Most farm production and management graduates were enrolled in programs by the U.S. Department of Agriculture.
14. There is no statistically significant relationship between a graduate's image of agriculture and his job satisfaction.

Conclusion:
The year 1968 was the last year that occupational plans were collected from New York State secondary agricultural graduates. The job satisfaction of graduates from this year indicate that occupational programs in agriculture percent for farm production and management graduates is sufficiently 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 vocational education in agriculture to identify the agricultural knowledge 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 be developed into curricula that will be primarily influenced by the increased level of input and employability, and job search skills.
5. Research is needed to identify the types and number of agricultural occupations available to graduates. It is ironic that many agricultural graduates train
6. This research is needed to determine the relative efficiency of on-campus versus off-campus directed work experience programs for training agricultural knowledge, skills, and abilities, individually and collectively.

From the Book Review Editor's Desk:

The book deals with the problems of locating projects and land use decisions in which people might profit from the use of remote sensing and related imagery techniques. It is intended for use by remote sensing specialists, planners, developers, and land use policymakers. The book includes a review of the remote sensing process, an analysis of the data, and the derivation of the decision process. It is a definitive improvement over the first edition.

The book is well written and is an excellent reference for the reader who wishes to use this technology in their day-to-day work. It is also useful for researchers who wish to study or develop new technologies for this field. The authors make a good job of presenting the material in a clear and concise manner.


This book is a comprehensive review of the subject of livestock judging and evaluation. It is a valuable reference for students, educators, and professionals in the field of animal science, particularly those involved in livestock judging and evaluation.

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This book is a comprehensive review of the subject of population, resources, and environment. It is a valuable reference for students, educators, and professionals in the field of environmental science, particularly those involved in population studies.

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A bibliography is provided along with the book to help the reader get started with further research.

Gerald C. Figer
University of Vermont

FEBRUARY, 1971

THE AGRICULTURAL EDUCATION MAGAZINE

From the Book Review Editor's Desk:

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THE AGRICULTURAL EDUCATION MAGAZINE
MISCONCEPTIONS CONCERNING VO-AG STUDENTS

Robert L. Haynes
Ph.D. Fellow, Department of Agriculture
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 View,” five misconceptions were identified.

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

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-100</td>
<td>Agriculture and farming range mean          82</td>
</tr>
<tr>
<td>77-97</td>
<td>Students electing vocational agriculture are substantially incompetent. 87</td>
</tr>
<tr>
<td>53-55</td>
<td>Vo-ag students are physically unattractive. 76</td>
</tr>
<tr>
<td>70-100</td>
<td>Vo-ag students are less aggressive for training above high school. 92</td>
</tr>
<tr>
<td>66-70</td>
<td>Vo-ag students have less education in agriculture. 84</td>
</tr>
</tbody>
</table>

Implications

These misconceptions about students of vocational agriculture are common among many students in the State of Mississippi and, I assume, 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 these misconceptions better than Vo-ag students exist.

1. Orientation is one of the most important aspects of the course of vocational agriculture.

2. Vo-ag students need less training and practice in agricultural subjects.

3. Vo-ag students are not physically unattractive.

4. Vo-ag students are less aggressive for training above high school.

5. Vo-ag students have less education in agriculture.

A Solution

We conclude, or to some degree, ridicule the spread of these misconceptions concerning Vo-ag students at Dartmouth Attendance Center (Mississippi) by the following methods 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.

3. A department of vocational agriculture was established to correct misinformation about these fields of study.

4. Discussions were held at PTA meetings.

5. An orientation unit outlined the misconceptions and discussing their non-validity was developed.

6. These misconceptions were discussed at local and district FFA meetings.

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 two socio-economic levels — lower and middle middle.

Findings

Three variables had a significant correlation with interest in ornamental horticulture. These were adequate paying jobs in ornamental horticulture and occupation.

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 reponsability 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 ornamental horticulture. Interviews were held with the horticultural 10 and 12 Chicago Park District workers who were employed at Garfield Park Conservatory.

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.

INTEREST OF TWO ETHNIC GROUPS

IN ORNAMENTAL HORTICULTURE

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

THE AGRICULTURAL EDUCATION MAGAZINE

February 1971
UnurYa Kenya
Kazi Kwa Ukulima
(FREEDOM FOR KENYA — WORK THROUGH AGRICULTURE)

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

The agricultural system of Kenya has its foundations 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. Substance practices must be replaced by approved productive practices. Men must supplement, if not replace the woman on the shamba (farm). A new concept is essential. Kenya must break the ice of the past; she cannot afford an educated elite.

A New Concept: Based upon another 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 perceptions so as to surmount this barrier." This was born a philosophy of education into which vocational agriculture would fit and the birth of a program that would shackle, if not cause to crumble, the concept of an educated academic elite.

The concept of vocational agricultural education 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 agricultural education in rural primary schools — 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 Bravina Killins who means Mr. Agriculture. The students were told that they were to be given the opportunity to study agriculture as they did biology, chemistry, physics, but it took them a long time to introduce to convince three years

Time is running out on the West Virginia/U.S.A.I.D. contract. Students have been successfully examined in the new field of agriculture. Local teachers have been trained to phase out the U.S. technicians and are working with enthusiasm. Today, in Kenya, agriculture is man's work.
OPPORTUNITIES AND REQUIREMENTS
FOR FARM MACHINERY MECHANICS

Dorrel L. Stokley
Research Assistant
Department of Agricultural Education
Texas A&M University

Revel S. Webb, Professor
Agriculture Education
Texas A&M University

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 proper condition? It would appear that unless steps are taken to solve this problem, unprepared farmers and their families face 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 farm machinery mechanics trade. To accomplish this purpose, two interview schedules were developed. One consisted of items related to opportunities for employment in the trade and the other identified the competencies 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 business participants reported mechanics to be their greatest labor need. The estimated number needed immediately was 7,000.

2. Part-time represented the second greatest need, as reported by 56 percent of farm machinery businesses participating. The estimated number needed 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 hour was $11.00 or approximately $2.50 per hour. The average wage for a beginning mechanic was slightly less than $7.50 per hour.

4. The minimum age for hiring mechanics was 18.

5. Most managers preferred mechanics be high school graduates.

6. Formal programs were sponsored within the farm machinery service and repair shops for training unqualified persons to be mechanics; however, it was found that a person with basic knowledge and skills can advance through informal means provided by shop experience, usually by being assigned to work under 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 under 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 pro- gramme 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, patience, 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 study:

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 mechanics 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 to do the trade.

This study was of 226 farm-raised male graduates of the Monticello Community High School, Monticello, Iowa, from 1950 through 1962.

Another 14 percent of the farm-raised male graduates were sons of farmers. 5 percent were sons of business people, and 3 percent were persons who were in crafts and industry. Twenty percent of the graduates entered professional occupations, 26 percent were engaged as farm operators and farm laborers, 17 percent were in service, 14 percent were craftsmen, and 11 percent were clerical and sales occupations. A total of 55 percent were in farming and agricultural related occupations.

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OCCUPATIONS OF MALE GRADUATES OF
THE MONTICELLO COMMUNITY HIGH SCHOOL

Gordon C. Mitchell
Vocational Agriculture Instructor
Monticello, Iowa

FEBRUARY, 1971
A NET INCOME OF $19,000 MAY NOT BRING SATISFACTION... OF those who had moved from the state, 65 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 61 percent of the farm operators, 26 percent of the professional workers, 91 percent of the students and 50 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 farm business, and 2 percent were classified as home based. 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 4 to 5 years. Approximately 50 percent of the sons of fathers who were high school graduates attended college.

Nearly 25 percent of the high school graduates did not attend college.

Size of Farm

Over 70 percent of the parents operated farms 81 to 160 acres. Nearly 23 percent operated from 161 to 240 acres. About 70 percent of the parents rented land and 70 percent rented less than 80 acres. Forty-four of the 22 graduates with an income of $13,000 or more were sons of parents who were farming 81 to 160 acres at time of graduation.

About 50 percent of the graduates completed at least 4 semesters of science. Thirty-six percent of the farmers completed 6 semesters of science. Fifteen percent had completed less than 2 semesters of vocational agriculture.

Twenty-two percent of the graduates, 63 percent of the farm operators, 45 percent in clerical and sales, 9 percent of the craftsmen, 47 percent in service, and 33 percent of the farm laborers completed 8 semesters of vocational agriculture.

Of the graduates who had completed 2 semesters or more of vocational agriculture, 38 percent were farming. Eighteen percent were farm owners-operators, 8 percent were partners and 52 percent were renters. Thirty percent were in agricultural related occupations.

Participation in School Activities

Participation in Future Farmers of America was extensive with 28 percent taking part. Other percentages of participation were: athletic teams, 6 percent; 4-H, 9 percent; drama and speech, 23 percent. 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 attendance, 6 percent attended 4 or more years of college. In the income groups of $4,999 and under, 57 percent had no college attended. Approximately 12 percent of the incomes reported were over $13,000. Of those in this group, 72 percent reported 5 jobs or less. Data revealed that 60 percent with net income in $3,000 and the group with $10,000 over $13,000 had 2 or less different jobs since graduation.

Expressed personal satisfaction of graduates in their occupations showed 44 percent were very satisfied, and 9 percent satisfied. Only 2 graduates indicated being dissatisfied with his occupation choice and 2 graduates were very dissatisfied. There was one graduate whose net income was over $10,000 who was only satisfied in his occupation.

JOE

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Satisfaction...
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 that 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 Resource 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, automobile sports, housing, highways, airplane, electrical power, hospitals and many other activities in amounts that beat any other country.

Farmers are industry's best customers using each year 1/3 as much steel as all 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 13,3 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 knows there wasn't any future in agriculture.

THE AGRICULTURAL EDUCATION MAGAZINE