Stories in Pictures

ROBERT W. WALKER
University of Illinois

Agricultural Education

Volume 42
June, 1970
Number 12

Students at Wallensville (Maryland) High School study the effects of hazards such as improper bolting, inadequate wiring, and voltage loss using the electrical demonstration board. (Photo by James Pope, Maryland Department of Education)

Students at Spence River College in Farm Machinery Technology examine a rotary engine after a thorough inspection. (Photo by Donald Whites, Spence River College, Carver, Illinois)

Work scholarships for $100.00 are presented Jerry Lane (left center) and Steve Fisk, agriculture students at Eastern Kentucky University. Making the presentations are Brian Brown (left) and Derry McAdoo (right), officers of the Agricultural Club at Eastern Kentucky University. Money for the scholarships, raised by an equal amount from the Agricultural Club, was contributed by local merchants. (Photo by Glenn Hayes, Eastern Kentucky University)

EVALUATION IN AGRICULTURAL

FLOYD COX
COLL. OF ED. UNIV. OF KY.
LEXINGTON KY 40506

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"Accountability" is going to replace "relevance" as the "in" word among educators. President Nixon's message on edu-
cation reform recently submitted to Congress proposed
that schools be held accountable for the education they pro-
vide. The President, using the language of an educational
evaluator, emphasized that the proper criterion for measur-
ing the success of a school was not some fixed national
norm, but rather "the results achieved in relation to the
actual situation of the school and the particular set of
pupils." It is apparent that the demand today is for
educational programs to be evaluated on a basis of what
they produce and not on potential to produce.

There is an ancient fable which states "that if you are not
sure where you're going, you're liable to end up some-
place else without knowing it." These sage words describe
well the urgency of meaningful objectives for vocational
education in agriculture. Few educators would refuse a
rationale which uses objectives as a guide for evaluation.
And we have made some progress in our quest for measure-
able objectives. The Vocational Act of 1963, the 1968
Amendments, and U. S. Office of Education Bulletin 4
(Continued on next page)

From the Editor...

A Possible Practice-Principle Gap in Evaluation

The writer for this issue made clear two important points about evaluating educational programs. One is that eval-
uation must begin with and be made in terms of objectives. The other is that more emphasis needs to be placed on
appraising the performance of persons who have completed educational programs in contrast to approaches to
evaluation which are limited primarily to describing and judging the processes by which programs are conducted. Few
of us will disagree with these tenets. However, a codified appraisal of techniques of evaluation in vocational edu-
cation and agricultural education will reveal a rather notice-
able gap between practice and principle.

Especially must be alert to effective practices and techniques which tend to upset, or even reverse, the "eval-
uation based on objectives" doctrine. Two approaches to
evaluation in vocational education which are currently
popular are follow-up studies of graduates and cost-benefit
analysis. Both techniques, although legitimate and necessary,
have the potential when used exclusively or improperly of
allowing objectives of educational programs to be unflu-
ently influenced, if not destroyed, by data and information collected.

In too many instances follow-up studies are limited to
a determination of the percentage of graduates who were working in occupations corresponding to the vocational
program they completed or left. The general interpretation
is that the higher the percentage the more effective the
program. If follow-up studies are to be of maximum value
in program development and revision, data other than the
percentage of persons working in occupations for which
they prepared must be included. For example, follow-up studies should also investigate factors which influence employment inde-
pendently of the preparation one receives. We know that a
person's abilities, interests, and socioeconomic status influ-
ence the nature of employment one seeks and is likely to
obtain. Also we run the risk of misinterpreting follow-up data if social and economic conditions affecting employ-
ment (Continued on next page)
From the Editor . . .

rates are ignored or overlooked. Of importance also is the fact that follow-up studies concerned primarily with the "Employment" factor de-emphasize other appropriate objectives of vocational education. The objectives to which we in agricultural education subscribe specifically measure occupational orientation and exploration, continuing education, and the development of human relations and leadership abilities in addition to occupational placement and economic security. Concern with all anticipated benefits of vocational education should result from follow-up studies.

The new program is currently being scrutinized by cost-benefit techniques also. Cost benefit is an evaluative technique that relates the total value of benefits of a vocational program to the total costs of the program. The application of the technique to vocational education requires that benefits as well as costs be expressed in monetary terms. So returns to investment in vocational education are expressed in the form of higher wages or income to the individual that would have approached evaluation. When cost-benefit approaches to evaluation are used evaluation of education is no longer based on the return on the investment in the form of higher wages or income to the individual that would have approached vocational education.

let us not overlook or forget that the chief concern of vocational education is the health, and development of individuals. Then the chief concern in evaluating the effectiveness of vocational education is an assessment of how well the vocational education can help individuals recover from the effects of the program. This may well be the only realistic examination of the accountability of the program toward accountability to objectives — an evaluation of our "product" and this is what we must evaluate.

As the public depends increasingly on education to solve its social and technical problems, it also increases its expectation of the quality of the educational product which is to be produced. Today, there is an increasing emphasis on accountability. More frequently, more people are asking questions about the public demand for performance of vocational education.
Performance Objectives: Foundation for Evaluation

(Continued from page 301)

As one moves from the local to the national level, objectives become more general. Teachers of agriculture also have less influence on the formative and summative assessments at the state and national levels. The broad objectives of the agricultural education program describe the generalization and competencies to be achieved by students at the state and district levels. These objectives are translated into more specific performance objectives by the state, district, and school. The teacher's role is to support and facilitate the achievement of these objectives.

Supervised Occupational Experience in Agriculture: Plans and Records

SUPEEHED OCCUPATIONAL EXPERIENCE IN AGRICULTURE: PLANS AND RECORDS

Student Record Book, 26 pp. (Three sets or 17 cents each in quantity plus mailing costs).

The Role of the Teacher

Both the Teacher's Guide and Student Record Book have been expanded and are more detailed and complete than the previous edition. The illustrations and examples are more up-to-date with the modern image of agriculture in its involvement with off-farm agricultural occupations.

The Student Record Book provides a place to record the basic experiences of the student in agriculture using off-farm agricultural occupations.

Some Guidelines

There seems to be an epidemic of evaluations. Everyone wants to evaluate everyone else. Teachers evaluate students; administrators evaluate teachers; the school board evaluates administrators; and the community evaluates the school. Evaluation is not a continuous process but is a part of the continuous process of teaching and learning.

The Value of Evaluation

HAROLD SHOAF, Supervisor
Kansas Department of Education

It has been said that the English language is one of the most difficult to understand. Part of the problem seems to be that words have different meanings to different people. Agriculture, for example, falls in this category. To write a meaningful evaluation means that the writer must be familiar with the field of agriculture. It means that the writer must understand the basic concepts and terms related to agriculture.

An evaluation is no better than the information and the instruments being used. Evaluations must have up-to-date knowledge of the field in which they are being evaluated. An evaluator who has not been directly involved in a specific field for a period of three to five years may not be qualified to evaluate the students because of the changes that have taken place in the field. In fact, he may do more harm than good. Likewise, an individual who is prejudiced toward a certain field should not participate in an evaluation. If an evaluation is to be successful, those participating in the evaluation must have a sincere interest and desire to improve the program being evaluated. It is not enough to expose the problems; answers must be furnished by the evaluator.

An Example

The Agricultural Education Division of the Kansas State Department of Education has conducted in-depth evaluations of its local programs since 1959. Evaluations are only made when requested by the local schools. Twenty-five evaluations have been made since 1959. Sixteen of the 22 schools that have been evaluated are still operating today.

Evaluations are requested by local districts when there seems to be a need for redirection or reevaluation of a program. The evaluation team consists of the supervising teacher of the agricultural education, head teacher educator, head agricultural mechanics educator, and the district supervisor. The evaluation takes one day. An oral report is given at the end of the day to all concerned. A written report of the evaluation is then sent to the administrators, teachers, or teachers, and others who are interested.

The evaluation begins with a conference with the administrator and the principal to determine the areas being served by the district and future plans. The evaluation then moves to the vocational agriculture department with the head teacher educator and state supervisor of agricultural education spending the day in the classrooms. The agriculture teacher responsible for the shop activities. The district supervisor visits the community with business- men and farmers who are involved in the program and may have information relative to the improvement of the program.

At the close of the day the evaluations give their oral report to the administrator. This is the report that opportunity is given for an exchange of views. This may be the most valuable part of the evaluation. Communication among the participants gives an opportunity to reexamine conclusions in lines which many programs are solved.

The Purpose of the Conducting the Evaluation is not to run down the teacher of the district. All praise is sincere and all constructive criticism is aimed at improving the program.

A Kansas group promoting the greatest benefit of this type of evaluation has been to adjust the vocational agriculture program from a production agriculture program to one that involves agricultural related activities. The example of the Kansas State Department of Education is one of the best examples of this type of program.
Occupations of Rural Male High School Graduates

Alas A. Kahlir and Clarence E. Bundy
Iowa State University

Where are rural farm youth going after high school graduation and in what types of occupations are they engaged? What factors are related to the occupational choices of farm youth? At a time when we hear and read so much about how vocational agricultural programs should be broadened to meet the educational needs of those planning to enter the off-farm agricultural occupations, these questions are significant.

A recent study of farm, male graduates of Nebraska high schools during the period 1954 through 1958 was an attempt to answer these questions. The study dealt with assessing the relationships between the graduates' occupations and the geographical locations of their high schools, their educational background, and their farm backgrounds. Data were obtained from 1,120 graduates of 69 Nebraska high schools.

Occupations

Although the graduates were engaged in a wide variety of occupations, this study was limited to an investigation of the primary occupation — the occupation from which the graduate received the majority of his occupational income — of each graduate. There were 26 occupational classifications, but graduates were engaged in farming either as farmers or farm managers. One per cent of the graduates were employed on farms, and 15 per cent were employed in off-farm agricultural occupations. The remaining 36 per cent were employed in occupations not related to agriculture.

When the graduates' occupations were grouped according to the U.S. Bureau of Census classification of occupations, the following distribution resulted:

<table>
<thead>
<tr>
<th>Classification of Occupation</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers or farm managers</td>
<td>17.7</td>
</tr>
<tr>
<td>Professional and technical</td>
<td>13.9</td>
</tr>
<tr>
<td>Sales and service</td>
<td>11.7</td>
</tr>
<tr>
<td>Craftsmen and proprietors</td>
<td>7.8</td>
</tr>
<tr>
<td>Laborers</td>
<td>7.8</td>
</tr>
<tr>
<td>Students and teachers</td>
<td>5.2</td>
</tr>
<tr>
<td>Executive and managerial</td>
<td>4.6</td>
</tr>
<tr>
<td>Professional and technical</td>
<td>4.8</td>
</tr>
<tr>
<td>Military</td>
<td>1.5</td>
</tr>
<tr>
<td>Farm laborers</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Of those graduates engaged in off-farm agricultural occupations, 27 per cent were employed in occupations in the feed and grain industries; 19 per cent were employed in the livestock processing and marketing industry.

Graduates engaged in occupations classified as agricultural educational services comprised 17 per cent of the total number of graduates in off-farm agricultural occupations. The highest proportion (22 per cent) of graduates employed in off-farm agricultural occupations were classified as managers and proprietors. Seventeen per cent of the graduates employed in off-farm agricultural occupations were in professional and technical occupations; 15 per cent were in sales occupations.

Migration

Graduates who entered agricultural occupations tended to remain in their respective communities more than did those who entered nonagricultural occupations.

Income

The following data indicate the occupational incomes of graduates:

<table>
<thead>
<tr>
<th>Income</th>
<th>Per Cent of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $1,000</td>
<td>5.0</td>
</tr>
<tr>
<td>$1,000 and under $5,000</td>
<td>46.8</td>
</tr>
<tr>
<td>$5,000 and under $10,000</td>
<td>44.8</td>
</tr>
<tr>
<td>$10,000 and over</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Sixty-one per cent of the graduates who had remained in the same county in which they had lived at the time of graduation had incomes of $6,000 or less; 65 per cent of those who had migrated to points beyond the borders of states continued in Nebraska had incomes over $6,000.

Home Environment

The economic area of Nebraska in which the graduates' high school was located was found to be related to the census classification of graduates' occupations and the migration of graduates away from their home communities. A higher percentage of graduates studied in eastern Nebraska (the western wheat or rye area of the state) had migrated away from their home communities. A higher percentage of graduates studied in western Nebraska were employed in agricultural occupations and farm owners and farm renters. A higher percentage of those graduates studied in central Nebraska who were employed in non-agricultural occupations than had graduates whose fathers were owners and farm owners. It was further observed that a higher percentage of the graduates whose fathers were farmers or owners of farm owners had migrated less extensively and reported higher occupational incomes.

With father's and mother's level of educational attainment being compared with selected factors associated with the graduates' occupational and educational backgrounds, it was found that educational attainment of the parents increased the graduates' occupational incomes, rank in high school, graduating class, and enrollment in post-high school institutions increased.

High School Background

When graduates were grouped according to the high school from which they graduated, it was found that graduates from the smaller high schools had more diversified occupational opportunities. Their home communities more extensively had participated more extensively in extracurricular activities, had attended high schools in the larger cities than those from the smaller high schools. Also, a higher percentage of graduates had enrolled in post-high school institutions after graduation. Graduates who were engaged in agricultural occupations had enrolled more extensively in science and mathematics courses while attending high school and had migrated greater distances from their home communities than did those who did not. A further clarification that it was found was that graduates' present occupations reflected their first "real" employment, and their farm backgrounds tended to influence their choice of occupations. Therefore, employment indirectly reflects job opportunities available at the time of employment. Applying these assumptions to this study, it was observed that the ratio of Nebraska farm male high school graduates employed in non-agricultural occupations to those entering off-farm agricultural occupations was approximately 2.5 to 1.

One might conclude that the graduates entered nonfarm occupations in increasing numbers from 1954 to 1958 as opportunities in farming diminished in the nonfarm industries increased. An alternative conclusion would be that entry of the graduates into farming was delayed pending completion of military obligations and formal education and the accumulation of needed capital resources. The latter conclusion seems most acceptable as it was found that of those graduates who wanted to enter farming after high school graduation but were unable to do so, 39 per cent indicated they intended to enter farming or college. Among those graduates engaged in farming, 60 per cent had entered the military service or college, whereas 59 per cent had indicated that availability of farms and/or the cost of farming had prevented them from entering farming.

The findings of this study suggest caution in planning vocational and agricultural curricula programs in Nebraska. Fifty-four per cent of the graduates were engaged in agricultural occupations, with 39 per cent of this group engaged in farming either as farmers, farm managers, or farm laborers. Ninety-two per cent of those who were engaged in farming and 50 per cent of those engaged in off-farm agricultural occupations were residing in the same county as the one in which they had graduated. The assumption is made that these graduates were engaged in occupations that they had intended to enter after graduation. Thus, the graduates' present occupations were a reflection of their educational background.

Implications

Several basic assumptions of the study have a significant bearing on the findings presented. The first is the assumption that it is necessary to allow a high school graduate from eight to ten years to become established in an occupation. If this is a valid assumption, the graduates who participated in this study had just entered these vocations. The second assumption suggested that the graduates' farm background would tend to influence his decision in favor of an agricultural occupation after high school graduation. If the graduates' present occupations reflected their first "real" employment and their farm backgrounds tend to influence their choice of occupation, such employment indirectly reflects job opportunities available at the time of employment. Applying these assumptions to this study, it was observed that the ratio of Nebraska farm male high school graduates employed in non-agricultural occupations to those entering off-farm agricultural occupations was approximately 2.5 to 1.

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AVA IS EFFECTIVE ... BUT MORE LEADERSHIP IS NEEDED

RALPH E. BENNER, President
Agricultural Education Division
American Vocational Association

The American Vocational Association has been effective in contributing to the growth and development in vocational education. This organization has been largely responsible for favorable legislative action and financial support. It has achieved leadership and influence through which the various divisions, departments, and sectional organizations have worked together in a coordinated program to improve the profession. Additional effort should be made by the AVA and its various groups in providing leadership that is not now available on any other basis at the same time. The same is true in some of the states.

Agricultural education is a well-organized division of the AVA. Many members are involved in a program that continues throughout the year. The list of officers and the Division, included elsewhere in this issue, indicates many of the worthwhile activities of activities underway. The division has attempted to provide leadership in these activities. Recent contributions are being made by each of the committees and through the NVATA, AETA, and the NASEA.

A brief analysis of some of the challenges in the Agricultural Education Division are included in the following:

Membership

Through the years the Agricultural Education Division has had an excellent record of AVA membership. It appears, however, that now and in the future additional emphasis needs to be given to recruiting and enrolling members. The membership in the division has increased the number of diversified programs—shown to some extent in the number of graduates in recently established programs. It is to be noted that some educational situations and area vocational centers, the competing emphasis of other educational associations, and the pressure of teacher salaries is making it more difficult to recruit. New and enriched instructional programs necessitate changes in the professional programs of our organizations.

Public Information

Acquainting others concerning the needs, problems, and accomplishments in vocational education is one of the greatest challenges to our profession. Agriculture has been significantly concerned with this problem due to the poor image in agriculture and the lack of appreciation for its importance in our economy. We have not spoken out well enough concerning the major problems in agriculture and the efforts that we have made and are continuing to make.

The Public Information Committee of the AVA, chaired by Dr. A. H. Koba, is giving leadership to the profession in "telling the story as it is." He reports that 24 states have designated persons who have responsibility for recruiting, receiving, and disseminating information about agricultural and vocational education. We should recognize that agriculture may not be able to boast of the increased numbers served to the extent of some other areas of vocational education. We will continue to serve larger numbers through new and enriched programs, but quality performance rather than numbers should be our hallmark.

Personnel Recruitment

One of the most productive committees in the AVA has been the Professional Personnel Recruitment Committee of the Agricultural Education Division. This committee has involved teachers of vocational agriculture, supervisors, and teacher educators in conducting activities to increase the supply of teachers of agriculture. Dr. Ralph Woodin, chairman, reported that the committee is working with 37 state recruitment commissions. Thousands of letters, brochures, and sets of slides have been distributed; exhibits have been arranged; and 685 teachers were recognized with special citations for their work in recruitment during the past year. Even though 252 most of these teachers were available in 1969 that the year previous, 30 states were in short supply. Our programs will continue to grow as additional personnel are needed. We need to continue to work together in securing additional personnel for new and expanded programs.

Legislation

The development of favorable legislation for vocational education has been and should continue to be a major effort in the AVA. The AVA, however, cannot do it alone. Support and assistance such as announced at the Bottom Convention through the organization of a National Committee for Vocational Education and Manpower Training and a monthly publication known as the "Vocational Education and Manpower Reporter," independent from the AVA, seems to be in the move in the right direction. The legislative effort, however, must be in concert with the total effort. Legislators and others do not appreciate conflicting stories.

Much consideration has been given to the development of a comprehensive manpower program. There is interest in the consolidation of funds and assets. Legislators are bombarded on all fronts concerning manpower. Vocational, educational, career education, and occupational education are the various forms through many groups and agencies. This is even confusing to the professions. As a result of their efforts concerning manpower, the availability of vocational education to those who need it. What is needed? How should it be provided?

Advisory Committee

The Advisory Committee of the Agricultural Education Division is becoming more effective. This has been due to the fact that there has been more communication with and use of this important committee of significant people.
Evaluation in Agricultural Education

C. V. TART
North Carolina Department of Public Instruction

It has been stated that an inventory is the key to success in any business or farming operation. Evaluation—the process of assessment and appraisal for the purpose of making rational decisions—may be termed an "inventory" of educational programs. Evaluation has always been a part of agricultural education, but federal legislation since 1963 led educators in North Carolina to look at programs in terms of breadth and depth of service to people.

Plan for Evaluation

In 1966 a project was begun which would result in the first Statewide evaluation of educational programs in the State. A committee composed of persons representing each vocational area was selected to formulate strategies, techniques, and practices in conducting the project. The committee labored but one charge and that was to help improve programs of vocational education in existent and potential highest quality for programs that were implemented in light of future available resources. This charge because the key purpose for evaluation.

The committee outlined a plan for evaluation to accomplish the following: to provide for involvement of personnel at the local and state levels in an evaluation of current programs; to determine the extent to which programs were being used in the evaluation; to create a positive atmosphere in which evaluators, leaders, and personnel at all levels would participate in the evaluation of the educational process; to determine the necessity of evaluation becoming a process rather than an event; to provide learning experiences so that the evaluation process will ultimately be somewhat self-sustaining with increased local involvement; to obtain a commitment to program improvement from each person involved in educational evaluation as a result of the evaluation; and to better organize supervision of all levels according to specifically stated objectives in terms of ways and means of improving programs of vocational education.

The Evaluation Committee developed a list of 22 objectives to be attained through the evaluation process.

To determine the extent to which:

education and supervision of vocational education is adequate, both at the state and local levels;

there is a program of student project, planning, and evaluation at the state level;

there is an adequate state and local in-service program in program planning and evaluation for vocational education;

vocational education resources are allocated according to occupational needs, both useful and gainful;

vocational offerings are meeting student objectives;

staff (teachers, counselors, volunteers) are engaged in continuous programs of professional development and the level of staff preparation is appropriate; and

appropriate facilities, equipment, and teaching materials are available and used for the vocational programs.

Following the formulation of objectives, personnel in each subject area and specific subject area, the objectives were formulated for the various programs.

To determine the extent to which programs were useful, efficiency was determined.

To determine the extent to which programs were being used, the procedures used included:

a survey of students on a random sample basis,

a survey of teachers and school administrators on a random sample basis, and

a study of programs and innovations in terms of improving the quality of instruction.

To determine the extent to which vocational education is a cooperative effort involving all persons:

students are meeting the occupational area for which they received vocational training and are progressing on the job or continuing training.

The Process

Since the same process was followed in all subject areas, the process used in this agricultural education will be discussed in detail.

The Agricultural Education Supervisory Staff utilized personnel at North Carolina State University, the Agricultural Extension Service, and local personnel as consultants in the development of an inventory test of the instructional programs of agriculture. This inventory test is evaluated and updated annually. After the inventory test had been used for two years, consultants from Oklahoma State University and Michigan State University were asked to revise the test and to make suggestions for changes and improvements.

Evaluation of all programs of agricultural education in North Carolina in one year would be a gigantic task; therefore, we decided to evaluate programs in 20 percent of the administrative units annually. The plan was extended to select participating units randomly with all units evaluated during a five-year period.

For each administrative unit to be evaluated, a meeting was scheduled which involved superintendents and other members of the state administrative staff, counselors, principals, and all vocational teachers in the schools involved. During the first year of the investigation the meeting the overall process of the evaluation was carefully explained. The second portion of the investigation involved personnel in each subject area working with a member of the state staff in order to determine whether they were to use could be explained.

Two instruments were given to each teacher with the understanding that the subject area involved, complete the evaluations, and mail one copy to the state office within the next four weeks.

Upon receipt of the instrument in the state office, a copy of the state staff visited the school and for the next two days to visit the school. During the first visit, the instrument was reviewed and discussed. The state staff visited the school and for the next two days to visit the school. During the first visit, the instrument was reviewed and discussed. The second visit was made to observe the progress being made and to get additional information.

Evaluation Summary

After visiting all programs within an administrative unit, the state staff member compiled a summary of agricultural education in the unit placing emphasis on strengths and weaknesses, barriers that might stand in the way of future high quality education in agriculture, and directions for a plan of action for a high quality program in the years ahead. No single school is identified in the summary unless there is some peculiarity not applicable to the other schools in the unit.

The evaluation summary for each subject area in the administrative unit is submitted to the chairman of the State Evaluation Committee. A copy of the information is distributed to each individual in each school and each administrative office at the local level involved in the evaluation. They are instructed to study the results of the evaluation and to make an effort to improve the recommendations. The member of the state supervisory staff is given a copy of the report with instructions to follow-up and to make recommendations relative to ways and means of improving agricultural education during visits to schools or administrative units involved in the evaluation.

Plan for Improvement

Approximately eighteen months after the evaluation report is received in the local administrative unit, personnel in the unit are again to be surveyed to report indicating the program area identified as needing improvement; actions taken to bring about improvement; action to be initiated later to bring about improvement; action now being taken to bring about improvement; and additional improvements that have been identified as being needed either because of the instruction that is being given, a new vocational course or because of new problems in existent vocational education which have been identified as being currently needed for which no action has been taken, and anticipated to bring about the needed improvement.

In an effort to evaluate more fully the product of agricultural education, three questionnaires were developed and used to be used in connection with the Agricultural Education Evaluation Instrument during the 1969-70 school year. The three questionnaires are being directed at administrators, teachers, and students and are available to persons teaching agriculture, former students, and employers of former students of agriculture.

State Conclusions

This is the fourth year of the program of evaluation has been in progress in North Carolina. Some conclusions can be made. Evaluation is a continuous process and those involved in the evaluation have come to realize the necessity of a planned program of evaluation of agricultural education. Local personnel should accept more of the responsibilities in the program of evaluation. Evaluation results are essential for long-range planning as well as for immediate planning.

Final results in program improvement in the state can be attributed to the evaluation process. Local administration and teachers of agricultural education programs which are more relevant to the needs of students and the labor economy are the results of the state's research and the state's responsibility to supervise the vocational programs in terms of stated objectives of vocational education in vocational education.

BOOK REVIEW

BUILDING FARM FENCES, Athens, by the American Association for Agricultural Education and Vocational Agriculture, Revised 1969, 33 pages.

The publication states that the information is based on research and experience gathered from all parts of the country. It is presented in a step-by-step procedure, and the tools and equipment required are commonly found on a farm. Persons interested in those considered best for hard construction from the standpoint of time, labor, and materials.

Gerald B. Fuller
University of Vermont
Evaluation: A Means to Guide Change

CLARENCE A. DITZENBAUER, Doctoral Intern Educational Testing Service Princeton, New Jersey

Evaluation presently finds itself with a stature unprecedented in education. This increase in importance of evaluation in education is the result of many factors. Three factors appear to be the most important: substantial investment of money by the federal government in education; protests by students who are concerned about the relevancy of their education; and rebellious taxpayers demanding accountability for rapidly increasing educational costs.

Collectively these factors seem to be telling American educators to turn the microscope on themselves and evaluate what they are doing. Traditional approaches and policies must be evaluated in light of today’s needs with an eye to the future. These conditions and meeting the designated criteria must be revised or discarded.

END OF MEANS

Most teachers closest contact with evaluation is the placing of a grade on a report card. Many vocational teachers evaluate by making an overall assessment of a completed shop project. Some teachers are exposed to evaluation by serving on accrediting teams. Still others use various unsophisticated schemes and label them evaluation. But are these activities evaluation? If the teacher, or such an individual, component in itself, these activities might be classified as rudimentary approaches to evaluation.

A more valuable approach is to view evaluation as an ongoing process providing the inputs to a desirable change in educational programs. This approach is known as formative evaluation. Formative evaluation becomes a means to guide educational change and not as an end in itself. Formative evaluation sounds very "professional," but teachers are often perplexed by the "how" of using evaluation to foster change.

Very few educational endeavors provide the desirable pupil-teacher relationships one finds in vocational agriculture. Through on-farm visits, cooperative work experiences, FFA, and other activities, the teacher obtains many insights about pupils. In most cases, these insights provide input data for the teacher to make decisions.

A PROPOSED MODEL

Formative evaluation must be considered in a framework of the decision-making process. How does the process applied to instruction in vocational agriculture? Is there any opportunity. The proposed model in a more formalized technique for making decisions about change in a vocational agriculture program.

Step 1

Ascertaining the Decision Area

A first step in the formative evaluation model is to determine the decision area. If not completely dump one program and initiate a brand new one, however desirable the latter seems to be. When ascertaining the decision areas, the teacher should look at the objectives for each phase of the program. If the objectives are clear and stated in behavioral terms, one can compare former and present outcomes and determine a relative degree of success or failure. These comparisons should provide an ordering of the decision areas.

If the objectives are not stated in behavioral terms, the task of ordering the areas of concern is much more difficult, but possible. Any proposed change should incorporate behavioral objectives.

Step 2

Select Appropriate Information

If the decision areas of concern are ordered properly, the selection of appropriate information is not difficult. In order to determine behavioral objectives from the first step greatly simplify the decisions necessary in this step. The confidence one can put into decisions varies directly with the objectivity of the appropriate information.

An example might clarify the point. You decide that an area of concern is the evaluation of a recently initiated extracurricular program. What information will be needed to make a valid evaluation of the program? The teacher should be able to construct the explicitly stated program objectives and identify the information necessary to measure the desired student behavior.

One objective might be as follows:

"Given a list of plants, the student will demonstrate his knowledge of horticultural practices by preparing a written annual calendar of necessary greenhouse management techniques. The calendar should include the time schedule for the individual steps needed, and the procedure for starting and growing the crop." A problem is for the teacher to identify what information measures successful attainment of the objective by the student.

Step 3

Collection and Analysis of Information

In this step, the teacher answers the "what," and "how" questions. This step involves two major activities: collecting and analyzing the appropriate information specified in the previous step. Formative evaluation places greater emphasis on answers to the "what" question of information collection and analysis procedures. Once the data is collected, if effective, the appropriate information must be collected and analyzed continuously during the educational program.

The major decision task is to answer the "how" question of information collection and analysis. Paper and pencil tests are probably the most widely used collection procedure. However, test score measurement criteria must be the test's relationship to a stated program objective. Therefore, tricky, or ambiguous test questions provide the teacher with minimal information about student attainment of programs objectives.

Performance tests are a more desirable technique for measuring student achievement in the area of educational agriculture. In a performance test, the student performs the actual tasks necessary to indicate his level of achievement. Problems associated with performance testing include specifying the necessary tasks, scoring the tasks, and the additional time required for testing. More efficient means of performance testing will result as its use becomes more extensive in vocational agriculture.

Another answer to the "how" of information collection is through subjective ratings of student performance. Subjective ratings are probably the least desirable collection procedure. In subjective ratings, objectivity is minimal and bias is maximal. However, the teacher-vocational agricultural instructor, if his vocational agriculture maximizes the teacher's assessment of student attainment by subjective means.

The analysis of the collected information is the second part of this step. The collection of information is useless if not analyzed. The teacher also sincerely desires to validate this hypothesis, and must analyze the collected information for more than the assignment of a student grade.

For example, a teacher using paper and pencil tests as a data collection device might analyze tests as follows:

1. Specify in writing the criteria on which the answers to test questions will be scored.
2. Score the questions on the test.
3. Analyze each student's response to each question, and determine the points obtained by each student on each question, especially discussion questions.
4. Review the test results in light of the previously specified criteria and program objectives.

This type of analysis provides information necessary for the critical decision to be made in the fourth step of the evaluation.

Step 4

Select Among Alternatives

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How First-Year Teachers Perceive Their Abilities

GILBERT S. QUILLER, Teacher Education
The Ohio State University

How do you rate yourself as a teacher? As a first-year teacher would you have described yourself as confident, well prepared, and optimistic, or would you have considered yourself apprehensive, inadequately prepared, and pessimistic?

Evaluation
One effort toward the evaluation of the teacher education program at The Ohio State University is a five-year study to determine the self-perceived abilities of beginning teachers in ten areas of competency. The ten areas of competency involve 60 professional abilities ranging from "using and advising council effectively" to "maintaining a clean shop."

Each year's data were collected during a summer workshop for all new vocational agriculture teachers immediately after graduation. At the end of the first year of teaching, the teachers were asked again to rate themselves on the same abilities. Only the responses of 12 teachers who were fully certified and employed to teach production agriculture in single-teacher departments are reported in this article.

It is likely that those employed to teach such specialties as horticulture, agricultural mechanics, and teaching disadvantaged youth would have different interests, motivational forces, and abilities. When this study was initiated, the majority of graduates were employed as teachers in production agriculture programs, and the abilities each teacher rated himself on were primarily relevant to these production agriculture programs.

Area of Responsibility

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<th>Average Rating</th>
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<td>Planning Physical Facilities</td>
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<td>Teaching Professional Improvement</td>
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<td>Promoting Public Relations</td>
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<td>Developing Occupational Experience Programs</td>
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<td>Conducting Cooperative and Counseling Activities</td>
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*Teachers rated themselves on a seven point scale for each of the 60 professional abilities. A rating of 4 indicated they did not have any ability while a rating of 1 meant they had demonstrated the ability with little help. The numbers reported are the average for the perceived abilities pertaining to each area of competency.

Percieved Abilities of First-Year Teachers

After the First Year

It is interesting to note the change during the first year of teaching in the teachers' perceived abilities. Their exposure to reality, the influence of other teachers, and the changes in their wives probably have much to do with the changes in the perceptions of their abilities as teachers of vocational agriculture.

Implications

An effective teacher education program cannot expect all newly prepared teachers to express complete confidence in their abilities in all areas of responsibility. Neither can we expect complete confidence or ability at the end of the first year of teaching. However, the considerable amount of data received from these teachers are expected to assist in the development of effective teacher education programs.
Advisory Committees for Vocational Education

J. W. Guilinger
Vocational Agriculture Teacher
Sycamore, Illinois

For many years in many smaller Illinois high schools, vocational education has been the dominate force in the community’s vocational education program. Certainly all would agree that the Vocational Education Amendments of 1968 as well as the Vocational Education Act of 1963 created a revolution in vocational education. Agricultural education must play a stronger role than it is present. Agricultural education, as now mandated, must become a part of the total vocational education program in a high school.

We must develop agricultural advisory committees to include more segments of the agricultural business community. We must also recommend or take the lead in the formation of general vocational education advisory committees with representatives from business and industry which are served by all areas of vocational education in the school system.

Advisory Committees

At Sycamore [Illinois] High School we have three separate advisory councils working within the school system. Each council is a specific area of vocational education such as agriculture, diversified occupations, and business and electronics. Each of the advisory committees has been in operation for a number of years. The advisory committee for agriculture has been in operation more than seventeen years.

A vocational education advisory council composed of representatives from the school system is needed to aid in developing programs to meet the educational needs of a particular community. Each segment of a total vocational program should be specific to the appropriate occupational area; but if we are to meet today’s challenge for occupational education, we must involve all areas of vocational education in an advisory committee which has the charge of assisting in the development and directing of a total vocational program for the school district.

Cooperation

If vocational education is to be considered a total program in a community, teachers of distributive education, diversified occupations, industrial arts, home economics, health occupations, and agriculture should meet monthly to inform each other of plans and goals. These meetings should be held in connection with a vocational advisory committee composed of representatives from each of the individual advisory committees. A vocational education advisory council composed of representatives of each division would be one of the best methods of improving vocational education in a community in order to meet the job placement challenge we face in the community.

Through the use of monthly meetings of teachers and the council, a total vocational education program for the community could be discussed and reviewed. The general council could develop and may job opportunities for all areas of vocational education. Through studies of the local community and area industries, business and agricultural job openings for high school graduates would be known and necessary curriculum changes could be formulated in time for those students. The general advisory council could also aid the school as an employment placement center in the community. Through the advisory group, local agricultural, industrial, and business enterprises could express the employment needs for the future.

We must consider the possibility of the school providing a job placement service for those graduates from high school but do not plan to continue additional education. If a job placement service is provided, agriculture should become an important part of the job available to high school graduates, particularly if the graduates had progressed through an employment program of their junior and senior years. Surveys of the diversified occupations program at Sycamore High School show that approximately 70 per cent of the students not pursuing further education remain in the community’s work force, thus becoming taxpayers who support the school system.

Evaluation

One of the major roles which an advisory council for vocational education might perform is the yearly evaluation of the total vocational education program. Subcommittees of the council might evaluate each area of vocational education in the system.

I feel vocational agriculture with its strong advisory committees which have been in existence for many years should take the lead and execute the development of an efficient committee in this area of vocational education in systems. This will enable us to develop stronger agriculturally oriented programs in current curricular programs.

Some students who are a slow learner can spend as much time as possible and repeat the film as many times as is necessary.

The one who produces Loop Films

The need for instructional materials to keep up with changes in agricultural education in high schools and junior colleges is greater than ever before. The 8mm loop film, sometimes referred to as single-concept loop films, can help meet the demands for effective instruction. The single-concept loop film is usually a one to five minute film involving a concept, information, or skill. The 8mm loop films are short, silent, continuous loops that offer advantages of economy and simplicity.

Advantages

The loops can be produced commercially or by the teacher. Loops of 8mm film loops are valuable in that they meet local needs and do it economically. The 8mm cartridge film is both simple and inexpensive to produce. You don’t have to be a camera expert, but you must be an expert in subject matter. In many respects making good educational films is easier than making good home movies. Educational films require control of the action since the film has a purpose. Single-concept 8mm loop films developed by teachers offer these advantages:

- Films can be programmed so that information is supplied to students in small, meaningful units with repetition when needed.
- Teachers are able to select subject matter related directly to classroom and laboratory instruction.
- The 8mm single-concept loop film and projector are easy to use and relatively inexpensive to develop, a color loop film can be developed for less than $10.
- The loop films are designed for individual use and for use by small groups.
- A student who is a slow learner can spend as much time as possible and repeat the film as many times as is necessary.
- Loops can be used with gifted students to enrich instruction.
- 8mm loop films can be used for laboratory exercises and demonstration effectively.

Using Loop Films

Single-concept films can result in a high degree of student involvement. Teachers who make their own movies quickly build up a valuable library of effective teaching aids. Project visits, here-to-days, techniques, developing skills, drill, repetition, field trips, and adjustment and maintenance of equipment are all easily recorded on 8mm loops and transferred to 8mm film loops. The equipment needed is a regular 8mm or super 8mm camera, a tripod, an auxiliary exposure meter, photo lights for indoor shooting, imagination, and a knowledge of the subject matter.

The 8mm single-concept loop film lends itself exceptionably well to instruction in vocational agriculture. The following are some ways of how loop films can be used:

- Beginning instruction in the agricultural mechanics laboratory such as tool conditioning, acetylene welder setup, striking an arc, and use of electrical equipment.
- Advanced techniques and skills such as valve grinding, timezone, hardening, reconditioning, concrete work, carpentry, and electrical wiring.
- Classroom instruction in areas such as soil testing, dehuminizing and docking, feeds and feeding concepts, milk testing, seed testing, evaluation, sprayer calibration, plant reproduction, animal reproduction, parliamentary procedure, and presenting farm business records.
- Preparation of judging teams in meats identification, wool identification, livestock, and others.

Availability of Loop Films

A profit-making company producing loop loops for use in vocational agriculture courses. There are a number of 8mm single-concept loop loop films dealing with the use of tools for industrial arts courses which can be used in agricultural instruction.

The silent single-concept loop films, either in regular 8mm or super 8mm, seem to be the most popular and versatile. The price range is from $18 to $25 for a single-concept silent 8mm loop film in a cartridge.
SUMMARIES OF STUDIES IN AGRICULTURAL EDUCATION 1965-1967

Abstracts of studies completed in agricultural education during the years 1965 through 1967 were recently published under the title Summaries of Studies in Agricultural Education, 1965-1967. The abstracts were compiled by the Research Committee of the Agricultural Education Division of the American Vocational Association and published by the American Association of Teacher Educators in Agriculture. Copies are available at $4.00 each from Interstate Printers and Publishers, Danville, Illinois.

TORETZER, PHILLIP AARON. An Analy- 

sis of Machine Costs in Crop Production in 


JOHNSTON, SCOTT R. An Evaluation of 

Cooperative Extension Service Programs in 

Agribusiness Education. 1962-1965. Devel- 

opment of Effective Education Program in 

Crop Production in North Carolina. Master's 


SCHWARTZ, RAYMOND D. An Analysis of 

Factors Influencing Participation in 

Agricultural Education. 1963-1965. Devel- 

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The basic reason for a preschool summer experience program for agricultural education majors is to provide learning experiences and firsthand observations of instructional activities in vocational agriculture. The summer experience program at South Dakota State University is optional and offers a variable credit basis with one semester's credit for each week spent in a vocational agriculture department. The course is open to either junior or senior students in agricultural education. The credit is granted primarily for the intellectualization of the experience.

Nature of Experience
The experiences of the prospective teacher should be typical of those in which the regular teacher is engaged prior to the starting of school. The teacher should be familiar with the usual pattern of summer instructional activities; however, that the summer experience program be scheduled at a time when the prospective teacher or other advice is available. It is recommended to provide a maximum opportunity to gain firsthand experiences in activities relating to the total program of vocational education.

The summer experience program should be designed to assist prospective teachers in understanding the activities in which experience cannot be made available to student teachers at any other time of the year. The course should contribute to further student teaching by providing students with a practical experience of vocational agriculture. The teacher-trainee should be able to see the relationship between the summer instructional program and the instructional program during the balance of the year. They should become familiar with the duties and responsibilities of vocational agriculture teachers during the summer months with particular emphasis on on-farm and on-job instruction, procedures and problems in agriculture. This program should occur during the first week of school, supervising FFA activities, preparing instructional materials, and relating and maintaining community support for the vocational agriculture program.

Activities
Students are encouraged to seek a major during the junior year. Some of the recommended experiences are:

- Become acquainted with high school registration
- Become acquainted with the school's policies, curriculum, teachers, and administrative personnel
- Become acquainted with facilities and materials for instruction
- Become acquainted with the supervised occupational experiences
- Become acquainted with the FFA program and activities
- Become acquainted with the community

It is felt that this program strengthens students and that upon graduation, they will be much more effective teachers. Students who have completed the summer experience program make better comments. "It should be required of all senior Ag Ed majors." I am especially glad I was able to participate in this course because up to this point I wasn't sure that agricultural education was really the field I wanted to be in.

EVALUATION

For Program Planning

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Stories in Pictures

ROBERT W. WALKER
University of Illinois

The Sepic superintendent, a broad member, the teacher of agriculture, and vocational agriculture students at Dore Schools, New Mexico, observe a student's sheep enterprise during an evaluation of the farming programs of the Dore Vocational Agriculture Department. (Photo by L. G. Delton, New Mexico)

Lester Williams, student teacher from Prairie View A&M College, Texas, presides at the Eighteenth Annual Conference of Student Teachers held during the National FFA Convention in Kansas City, October 1969. (Photo by Robert W. Walker, University of Illinois)

A display of mixed wool helps Leroy Whitmer, Vocational Agriculture Teacher at Meeteetse, Colorado, teach panner rate and use of tools. (Photo by Pete Foster, Colorado)

National FFA President, Harry Brindgall, receives a check for $10,000 for the FFA Foundation from Paul Horstman (right) of the General Motors Corporation, and N. B. McDowell, Executive Director of the FFA Foundation, at the National FFA Convention in Kansas City, October 1969. (Photo by Curtis R. Weaver, University of Missouri)

Discovering vocational education legislature during the 1970 Central States Seminar in Agricultural Education held at the Sherman Hotel in Chicago are (left to right) Congressman Albert J. Guile of Minnesota; Edwin St. John, Michigan; Edgar A. Peterson, University of Minnesota; and Darea M. Lane, University of Missouri. (Photo by Curtis R. Weaver, University of Missouri)