

AN ANALYSIS OF PRACTICES USED IN EVALUATING LOCAL
PROGRAMS OF ADULT EDUCATION IN
VOCATIONAL AGRICULTURE

By

Walter Phelps Schroeder

A THESIS

Submitted to the School of Graduate Studies of Michigan
State College of Agriculture and Applied
Science in partial fulfillment of
the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Agricultural Education

1953



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APPROVED:

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Purpose

The major purposes of the research involved the discovery and appraisal of practices used in evaluating local programs of adult education in vocational agriculture. A contributory purpose called for the establishment of criteria for a good program of adult education in vocational agriculture.

Method

A review of literature provided the basis for the initial statement of ten criteria and accompanying assumptions for a good program of adult education in vocational agriculture. Twenty leaders in agricultural education and/or in adult education evaluated the criterion statements and assumptions, found them acceptable and added none.

Measures for each of the ten criteria and a list of 30 evaluation practices drawn from the literature were sent to 505 experienced teachers of agriculture for adults in nine north-central states. Returns totaled 362, or 70.7 per cent, of which 352 were usable. Six of the ten criteria were proven valid on the basis of Pearson correlations of all scores for each criterion measure provided in each of the 352 programs. The worth of the 30 evaluation practices

was determined by establishing the relation between the use of each evaluation practice and each of the six criteria found to be valid.

Findings and Interpretations

The criteria "relative size of program," "activities materializing," "maintenance of activity" and "percentage of attendance" were not found to be valid in this study. Six criteria, "rural clientele served," "flexibility," "results," "methods," "coordination," and "cooperation," were found acceptable in this study and are recommended to teachers of vocational agriculture, local administrators, state supervisors, teacher educators, farmers and others for use as the basis of program evaluation for adult education in vocational agriculture.

The first twenty-nine of the following thirty evaluation practices studied are recommended for use in local communities. Judgment should be used in making application of the practices. Practices high on the following rank-order-of-merit list should be considered first.

1. Progress is compared with progress of other years and progress in other communities.
2. Cooperative activities developed are noted.

3. Business men assist in the evaluation of the program.
4. Leadership development is noted.
5. Cooperative organizations formed are noted.
6. Other agricultural agencies assist in the evaluation of the program.
7. A list is made of the methods and devices to use in collecting evidence which will reveal that objectives are being met.
8. Systematic study of the community is made to discover changes in farming due to instruction.
9. Class members assist in the evaluation of the results of instruction.
10. Part of a special field day is devoted to evaluation.
11. Clearly stated objectives form the basis for evaluation.
12. Other teachers in the school, administrators, school board members, state supervisory staff and college or university education staff help evaluate the program.
13. Plans and action are based on the analysis and interpretation of the results of evaluation.
14. Enrollment records are analyzed to determine the extent to which the program serves all who want, need or can use adult education.

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15. The results of instruction with class members are compared with the economic and social achievement of non-class members.
16. Practices are observed on tours to farms of class members.
17. Attendance records are analyzed to determine regularity of attendance and the type of farmers who are attending.
18. Advisory committees assist in the evaluation of the program.
19. Part of the last meeting of the course is used for evaluation.
20. The instructor evaluates results of instruction as he visits the farms of class members.
21. Instruction is evaluated by analyzing approved practices planned and used.
22. A list is made of the kind of evidence needed to indicate that objectives are being met.
23. Evaluation occurs at specific intervals throughout the year.
24. Pictures of "before" and "after" situations are used.
25. Farmers and teacher agree on the value of an approved practice.
26. Results of instruction with class members are compared with standards, averages, individual or other goals.

15. The results of instruction with class members are compared with the economic and social achievement of non-class members.
16. Practices are observed on tours to farms of class members.
17. Attendance records are analyzed to determine regularity of attendance and the type of farmers who are attending.
18. Advisory committees assist in the evaluation of the program.
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22. A list is made of the kind of evidence needed to indicate that objectives are being met.
23. Evaluation occurs at specific intervals throughout the year.
24. Pictures of "before" and "after" situations are used.
25. Farmers and teacher agree on the value of an approved practice.
26. Results of instruction with class members are compared with standards, averages, individual or other goals.

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27. Change in attitude of class members is noted.
28. Production records of class members are used to indicate effectiveness of instruction.
29. Part of an on-farm meeting during the summer is used for evaluation.
30. A check of approved practices carried out is maintained on a chart.

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CHAPTER I

INTRODUCTION

The accurate appraisal of outcomes of adult education has been a real problem for those who concern themselves with instruction that makes a difference in the lives of people. Expanding enrollments, increasing costs for plant, equipment and instruction and limited facilities are secondary factors that cause teachers and laymen to give added emphasis to the evaluation of adult education provided through the public schools. Although there is need for evaluation in any type of education, there is a particular need for evaluative tools and techniques in adult education that can be effectively used in a continuously changing pattern of political, social and economic life.

The Problem

A variety of evaluation practices have been used to determine the quality of adult education in vocational agriculture. The worth of these evaluation practices has not been determined. It was the major purpose of this study to discover and appraise the practices used to evaluate local programs of adult education in vocational agriculture. A subsidiary purpose involved the determination of criteria to use as the basis for evaluation. Three problems emerged, namely:

1. The determination of criteria used as the basis for objectives and evaluation of adult education in vocational agriculture.
2. The determination of the practices used in evaluating programs of adult education in vocational agriculture.
3. The establishment of a relation between the evaluation practices and the criteria.

Assumptions

The assumptions on which this study is based are:

1. Adult education is an accepted part of the public school educational program.

Trends in legislation affecting education in the public school and recent statements by leaders in adult education will point out the acceptance of education for adults in the program of the public school.

The early laws governing education in the United States provided only for the education of children. The Massachusetts Law of 1642, according to Cubberly:¹

"... directed the officials of each town to ascertain, from time to time, if parents and masters were attending to their educational duties; if all children were being trained in learning and labor and other employments profitable to the commonwealth;

¹Elwood P. Cubberly, Public Education in the United States. New York: Houghton Mifflin Company, 1919, P. 17.

and if the children were being taught to read and understand the principles of religion and capitol laws of the country."

Cubberly also states that this is the first time in the English-speaking world that a legislative body representing the state ordered that all children should be taught to read. The law clearly states that education is for children only.

The second important step in establishing a school system was taken when the Massachusetts Law of 1647 was passed. Cubberly points out the importance of the 1647 law by saying:²

"Not only was a school system ordered established - elementary for all towns and children, and secondary for youths in larger towns - but, for the first time among English-speaking people, there was the assertion of the right of the state to require communities to establish and maintain schools, under penalty of fine if they refused to do so."

Nearly a century and a half later there can be detected a note in legislation that schools are not for children alone. The Ordinance of 1787, although not including a specific statement requiring adult education, does not rule out education for adults. The Ordinance reads in part:³

"Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged."

²Ibid., P. 18.

³John S. Brubacker, A History of the Problems of Education. New York: McGraw-Hill Book Company, Inc., 1947, P. 9.

The sentiment of the ordinance was incorporated in the educational code of many of the colonies and states formed prior to 1787, but the exact ordinance was incorporated in the state school codes of many states joining the Union after 1787. This is especially true of the states providing data for this study.

It was in 1917 during World War I, when food and technical skill were especially needed, that the Smith-Hughes Act was passed by the United States Congress. Apparently the major intent of the Smith-Hughes Act was for adult-farmer education, which was to occur through the public school. Section 10 of the Smith-Hughes Act illustrates this point:⁴

"... such education (agricultural) shall be that which is under public supervision and control; that the controlling purpose of such education shall be to fit for useful employment; that such education . . . be designated to meet the needs of persons over fourteen years of age who have entered upon or are preparing to enter upon the work of the farm or farm home; that the State or local community, or both, shall provide the necessary plant and equipment..."

Seven subsequent acts by the Congress have provided for enlargement of the educational program established by the Smith-Hughes Act. One of these later acts, the National Defense War

⁴Lloyd J. Phipps and Glen C. Cook, Handbook on Teaching Vocational Agriculture. Danville, Illinois: The Interstate Publishing Company, 1952, P. 989.

Training Act, contained five laws providing only for adult education through the public schools.⁵

Another type of adult education provided only by the public school has been the Institution-On-Farm Training for World War II Veterans. In a report on this type of adult education it was stated:⁶ "the institutional on-farm training is a very intensive type of agricultural education for adults . . . The intensive instructional program and the subsistence payments to trainees made this program one of the most expensive educational programs for farmers ever sponsored by our government."

An educational program of a similar nature is now being provided for Korean War veterans. Veterans of both World War II and Korea may choose to attend private or public educational institutions. There appears to be a trend toward providing education for veterans, much of which will occur through the public school.

For nearly a half century, Michigan has provided specific legal provisions for financial support of adult education. The first act, The Alien Education Law, was passed in 1906. In 1951

⁵Ibid., P. 26.

⁶Report of the Cooperative Study of Institutional On-Farm Training in the Central Region. Danville, Illinois: The Interstate Publishing Company, 1950, P. 7.

the Michigan legislature passed the eighth law authorizing public school systems to offer programs of adult education.⁷ The latest law is called The Community College Law.

Recognized educational leaders also point out the trend toward adult education through the public schools. For example, C. A. Bell, one-time director of vocational education in Illinois, explained the place of adult education in the public school when he said:⁸

"In expanding the part-time and evening programs, vocational agriculture not only follows the State and National trends toward adult education, but also parallels participation of other fields of vocational education in Illinois at the adult level. As increasing numbers of adults "go back to school", public school buildings everywhere are being employed with increasing efficiency and effectiveness. Their facilities are thus made available to adult workers interested in further training for self-improvement."

Kempfer published in the United States Office of Education Pamphlet No. 107 a pointed statement on the responsibility of public schools for adult education which reads:⁹

⁷ Adult Education Leaflet No. 2, Lansing, Michigan: Department of Public Instruction, 1949, P. 1.

⁸ Part-Time and Evening Classes in Vocational Agriculture in Illinois, Bulletin No. 79. Springfield: Board for Vocational Education, 1941, P. 3.

⁹ Homer Kempfer, Adult Education Activities of the Public Schools, A Report of a Survey, 1947-48. Pamphlet No. 107, U. S. Office of Education, Washington, D. C.: Government Printing Office, 1949, P. 1.

"Adult education takes many forms ranging all the way from formal scholarship study to informal activities bordering on purely social and recreational. Likewise, as befits our democracy, adult education is provided by many kinds of institutions and organizations, both public and private. Among these is the public school which, as America's most widespread and primary agency for organized education, has inherently a major responsibility for providing leadership and opportunity in this field."

One of the most recent statements declaring the responsibility of the public school was made by Hamlin when he said:¹⁰

"The public schools of the United States are dedicated to the development of "good citizens." Commonly this means the development of men, who will provide for their own needs to the extent that they can be made capable and men who will live helpfully with their fellow men. It connotes such ancient virtues as integrity, honesty, dependability, industry, thrift, unselfishness, courtesy and courage."

Hamlin goes on to say that the inadequate conception of complete education before age 21 is being superseded. "Some of the most difficult problems which citizens have faced in the past generations have been problems they were not prepared in their fundamental education to face."¹¹

From various federal and state laws and statements by educational leaders it is evident that there is a trend toward the

¹⁰ Herbert M. Hamlin, "The Unique Role of Public School Education in Agriculture." The Agricultural Education Magazine, 26:32, August, 1953.

¹¹ Ibid., P. 32.

acceptance of adult education as a part of the program of the public school.

2. Public school adult education makes a difference in the lives of people in terms of skills, abilities, understandings, attitudes and other measurable changes in behavior.

The public school has brought many changes in adult behavior. One example of behavior change is stated in a report from a school participating in the Michigan Community School Service Program which has sought to aid people in developing an improved community.¹²

"Adults have taken part in the instructional (school) program by giving instruction in income tax, dress making, farm machinery set-up, customs and descriptions of foreign countries and their peoples, history of our community, water testing, village government, etc. . . . Attitude changes, both individual and group, have probably been most evident in breaking down of barriers and of growth of the feeling of all belonging and pulling together. These changes are most subtle, but their appearance is quite evident."

The development of cooperative organizations requires several types of behavior changes by people who participate in the development and operation of such organizations. One of the changes is usually in attitude, either a change to a definite

¹² Materials Published on the Community School Service Program. Lansing, Michigan: Department of Public Instruction, 1949, P. 118-119.

attitude from no particular attitude or a change from a previous attitude. Struck cites the development of cooperatives through instruction in vocational agriculture.¹³ His list includes a cooperative cotton gin in a Mississippi community, a cooperative poultry marketing association at Troy, North Carolina and a cooperative cannery which put up over 20,000 cans in a year in another community in the same state. Struck emphasizes that cooperatives have been developed in many sections and in many states in the nation. Teachers in the public school have assisted in this development.

A comprehensive type of education carried out by the public schools was the foreman-training program provided prior to and during World War II.¹⁴ In this program 98,957 adults participated in an educational program which was pointed toward improving technical knowledge, leader techniques and development of the ability to secure and organize subject matter for their field of work.

¹³Theodore F. Struck, Vocational Education For A Changing World. New York: John Wiley and Sons, Inc., 1945. P. 388.

¹⁴Layton S. Hawkins, Charles A. Prosser and John C. Wright, Development of Vocational Education. Chicago: American Technical Society, 1951, P. 494.

Another accomplishment of adult education in the public schools serves to emphasize the function of the public school in developing behavior changes in adults. During the 1943-44 school year 135 communities in Michigan conducted classes in repair, operation, and construction of farm machinery and equipment.¹⁵ The adults in the classes in the 135 communities repaired 7500 major farm machines which included 747 tractors, 171 harrows, 635 plows, 411 cultivators, 339 wagons and other equipment. In addition to the repair work the adults constructed 2,200 pieces of farm equipment which included 96 sweep rakes, 291 trailers, 54 grain elevators, 88 self-feeders for hogs. Added to this was the repair of 5,000 to 10,000 smaller items of equipment.

From this sample of accomplishments of behavior change developed in adults through the public school it is evident that public school adult education makes a difference in the lives of people in terms of skills, abilities, understandings, attitudes and other measurable behavior changes.

¹⁵ State Board of Control for Vocational Education, Biennial Report of the State Board of Control for Vocational Education for the Biennium Ended June 30, 1944. Bulletin 209, Rev. Lansing, Michigan: State Board of Control for Vocational Education, 1944, P. 20.

3. Agriculture is an important segment of the social and economic life of the nation.

Liberty Hyde Bailey made the following prophetic statement in 1915:¹⁶

"Agriculture is in the foundation of political, economic and social structure. If we cannot develop starting-power in the background people, we cannot maintain it elsewhere. The greatness of all this rural work is to lie in the results and not in the methods that absorb so much of our energy. If agriculture cannot be democratic, then there is no democracy."

At a later date Sanderson voiced similar views by saying:¹⁷

"Agricultural economists and the farmers on the land are becoming increasingly aware that they cannot solve the problems of agriculture except in terms of the economic well being of the whole country; that if agriculture is to prosper it will do so only through a rise in the national income."

Sanderson emphasizes the need for a good balance between rural and urban interests if such social problems as population shifts, use of labor and housing are to be solved satisfactorily.¹⁸

Schultz, an agricultural economist, summarizes the impor-

¹⁶L. H. Bailey, The Holy Earth. New York: Charles Scribner's Sons, 1915, P. 149.

¹⁷Dwight Sanderson, Rural Sociology and Rural Social Organization. New York: John Wiley and Sons, Inc., 1942, P. 189.

¹⁸Sanderson, Ibid., P. 188.

tance of agriculture in the economy by saying:¹⁹

"The full picture of what needs to be done in our peasetime economy cannot be grasped without this knowledge of the relationship of agriculture to the rest of the economy."

Even though the agricultural population is becoming a smaller part of the total population, rural people remain important in the social and economic life of the nation.

4. Well educated farm people are necessary to provide adequate food for the nation and to maintain a stable rural community.

The increasing importance of fewer farm people producing food for a steadily enlarging national population is described later in this chapter.

The technical knowledge needed by the contemporary farmers in the United States can be shown by an example of the scientific nature of poultry raising. Science and the Farmer reported in March, 1953 that antibiotics were essential in turkey raising.²⁰ The addition of 4.5 grams of terramycin per ton of feed increased the weight of the birds by 7.9 per cent over the control group, during an eight-week feeding period.

¹⁹Theodore W. Schultz, Agriculture in An Unstable Economy. New York: McGraw-Hill Book Company, Inc., 1945, P. X.

²⁰J. C. Atkinson, R. C. Boucher and E. W. Callenback, "Feed Turkeys Antibiotics All the Way; Increase Rate of Growth Considerably." Science and The Farmer, Pennsylvania State College, March, 1953, P. 8.

The above example of technical knowledge needed by farmers today can be repeated in a similar way in crop and livestock production, crop harvesting and storage, building and equipment construction and maintenance, irrigation and other phases of agriculture.

In addition to the production of crops, livestock and poultry, Struck emphasizes the need for skill in business management of the farm.²¹

Struck also points out that the public school through vocational agriculture has a responsibility in developing good soil use and conservation methods.²² He calls attention to the gravity of the soil conservation problem by stating that 9 per cent of the crop acres of the United States have been ruined, 30 per cent partially ruined, and from 14 to 24 per cent are potentially subject to destruction. The quality of soil has a material effect on the amount of food available for the people of the nation. Educated farm people are needed who have the technical ability and the social sensitivity to conserve and use soil properly.

²¹Struck, Op. Cit., P. 380.

²²Struck, Op. Cit., P. 381.

The relation between well-educated farm people and a stable rural community is summarized by Sanderson in the following statement:²³

"The improvement of the rural community and its institutions is the best means of building a rural culture with distinctive values, which will strengthen our whole society, and the school, particularly the high school, has a major responsibility for assisting the process of rural community organization."

The same author provides a vivid comparison between education and social and economic stability when he reports that in a careful study of families on relief in rural problem areas in 1934 it was found that, "one-half of the negro family heads and one-fifth of the whites in the Eastern Cotton Belt reported no schooling and four-fifth of the negroes and about one half of the whites had less than five years."²⁴

It is clearly evident that well-educated farm people are necessary to provide adequate food for the nation and to maintain a stable rural community.

²³Sanderson, Op. Cit., P. 390.

²⁴Sanderson, Op. Cit., P. 354.

5. Adequate financial resources are essential for a program of adult education.

The accomplishment of activities cited in assumption (2) shows the need for adequate facilities to provide needed instruction in adult education.

Giving support to the need for adequate facilities is a statement made by Cook, Walker and Snowden:²⁵

"The scope of the program in farm mechanics is often limited in the school because of poor facilities."

Sanderson gives repeated support to the need for adequate facilities for adult education. In one statement he gives the broad approach to the need.²⁶ "In many areas the community facilities will not be complete until the high schools become true community centers for educational, recreational and cultural aspects of community life." He makes it clear that the school must provide facilities for adult and out-of-school youth education as well as elementary and secondary education.²⁷ Adequate

²⁵Glen C. Cook, Clyde Walker and O. L. Snowden, Practical Methods in Teaching Farm Mechanics. Danville, Illinois: The Interstate Publishing Company, 1952, P. 57.

²⁶Sanderson, Op. Cit., P. 371.

²⁷Sanderson, Op. Cit., P. 352.

financial resources are necessary to provide suitable facilities deemed necessary by the above citations.

It is assumed that not all adult education will occur in public school buildings even for participants in adult education classes provided by the public schools. Assuming that the major portion of such adult education does occur in public school buildings there is a need for adequate facilities such as classrooms, shops, laboratories, studios and other meeting rooms. Adequate finance is needed for good facilities regardless of location. Coupling the resources of buildings and adequate teaching and administrative personnel, the following statement points out the responsibility of a local board of education:²⁸

"The local board of education must be sensitive to the need for and the importance of adult education. It should develop sound operating policies and provide adequate financial resources."

Definition of Terms

The following terms, which are defined as follows, will be used in this study:

²⁸ Adult Education Leaflet No. 3. Lansing, Michigan: Department of Public Instruction, 1949, P. 1.

Adult education. A succinct definition for adult education is provided by Essert.²⁹ He says:

"There are two broad types of adult learning. One of these is, of course, learning from consciously planned, purposefully organized learning situations. These constitute what is often called, "adult education", which consists of individual-and home-study plans, classes, forums and other group-study plans. The other broad type of adult learning is that which occurs in day-to-day experience."

Adult education in vocational agriculture is education provided for farmers through the public schools of the United States. The lower age limit for enrollees is approximately 26 years. Such education is usually aided financially by federal funds through the Smith-Hughes Act passed in 1917 and subsequent acts and in many states by state funds. Phipps and Cook state that:³⁰

"The Smith-Hughes Act and the subsequent vocational education acts provide for a definite educational need which other agencies are not designed to provide. Vocational education in agriculture is designed to provide systematic instruction carried on in schools or classes. Part of this systematic instruction must be the super-

²⁹ Paul L. Essert, Creative Leadership of Adult Education. New York: Prentice Hall, Inc., 1951, P. v.

³⁰ Lloyd J. Phipps and Glen C. Cook, Handbook on Teaching Vocational Agriculture. Danville, Illinois: The Interstate Publishing Company, 1952, P. 501.

vision of practice in farming activities for which instruction is being offered in a school or class . . . Systematic instruction, as defined, requires classes of at least two weeks duration with related supervision of practice . . . The (Smith-Hughes) act states that "such education shall be less than college grade and be designed to meet the needs of persons who have entered upon or who are preparing to enter upon the work of the farm."

Phipps and Cook make the distinction clear between adult education in vocational agriculture and agriculture extension when they state:³¹

"Extension work does not provide systematic courses of instruction . . . The purpose of the extension program as stated in the Smith-Lever Act (of 1914) is: "to aid in diffusing among people of the United States useful and practical information on subjects related to agriculture and home economics and to encourage the application of the same."

Criterion. Webster defines criterion as, "A standard of judging; a rule or test by which anything is tried in forming a correct judgment respecting it."³² In this research the criteria studied will be the standards by which evaluation practices are found to be of value.

Evaluation. "It (evaluation) is the means by which we

³¹ Ibid., P. 502.

³² Webster's Collegiate Dictionary, Fifth Edition. Springfield, Massachusetts: G. and C. Merriam Company, 1947, p. 241.

judge the worth of an activity according to some definite scale of values."³³ Adult Education Ideas provides a similar definition which states,³⁴ "Evaluation is the process of comparing actual characteristics with desirable characteristics. Desirable characteristics are value judgments accepted by the evaluator."

Another definition is provided to explain the difference between evaluation and measurement:³⁵ "Evaluation is never the same thing as measurement. Even when measurements are available, evaluators still have to make judgments about what the measurements mean, in terms of changing the program or keeping it as it is. Measurements can support judgment about strengths and weaknesses in a program. They are never substitutes for judgment." The view of evaluation expressed in the statements above is the one used in this study.

Index. "A ratio or other number derived from a series of observations and used as an indicator or measure of certain

³³Score card for Community Adult Programs. Continuing Education Service, Michigan State College, East Lansing, 1951, P. 2.

³⁴Adult Education Ideas. Federal Security Agency, Office of Education, Bulletin No. 12. Washington, D. C.: Government Printing Office, 1950, P. 1.

³⁵"Hurdles for Evaluators", Adult Leadership, 1:11-12, April, 1953.

conditions" is the definition provided by Webster's Collegiate Dictionary³⁶ and the one used to define index as used in this study.

Superior program. Superior program refers to a high quality program of adult education in vocational agriculture as measured by valid criteria determined in the study.

Inferior program. Inferior program refers to a low quality program of adult education in vocational agriculture as measured by valid criteria determined in the study.

Background for the Study

The first part of this section will deal with the nature and extent of public school adult education in the United States. A survey of the nature and extent of adult education in vocational agriculture concluding with an exposition of need for evaluation will comprise the second part of the background for the study.

Basic changes have affected the lives of people in the

³⁶ Webster's Collegiate Dictionary, Op. Cit., P. 509.

United States. One aspect of this change is clearly defined by

Essert:³⁷

"There are some evidences that there is a genuine ferment of group and community planning at the base of our society which most of our institutional leadership has failed to recognize or understand . . . The most common characteristic seems to be that people come together for planning group thinking and cooperative action because they have finally lost confidence in panaceas and have simply said, "It's up to us." . . . Difficult as frontier life was, it was not nearly so hard as it is for people to learn this new lesson . . . However, here and there, in small groups and communities, people are discovering new wealth in old land, and are developing new methods for making old institutions more conscious of their duty to involve people in responsible participation. As they work together in these groups with a job to be done, an action to be performed, an evaluation to be made, they are experiencing a sense of belonging - a true sense of community."

In describing the change, Essert has called attention to the need for an appraisal of action taken by people as they search for satisfying and satisfactory adjustments to a changing world.

As people move together through institutions such as the public school to learn how to make necessary personal and group adjustment, there comes to their deliberations the need for appraisal of action. The important needs for evaluation in adult education have been outlined by the Committee on Evaluation for

³⁷ Essert, Op. Cit., P. 10.

the Adult Education Association of the United States of America.³⁸

These needs for evaluation are:

1. "Program improvement
2. Program defense
3. Professional growth and security."

Specificity is thereby added to Essert's generalization.

Further emphasis of the need for evaluation in adult education is pointed out in Adult Education Ideas.³⁹

"Evaluation is most useful in revealing opportunity for improvement and stimulating growth - professional growth and program growth. The evaluator sees what has to be done and what is yet to be done, where it needs to be done, and often gains insights into how it can be done."

A look at the breadth of adult education in public-schools in the United States brings two observations to the foreground. Adult education is a part of public-school education. The scope of activities in adult education at the present time calls for meaningful evaluation which will provide sound bases for making decisions that will guide educational progress.

A study conducted by Homer Kempfer furnishes the basis for the above two observations. Kempfer found in a study of public-school adult education in the United States, in 1947-48 that:

³⁸ Committee on Evaluation, Program Evaluation in Adult Education. Chicago: Adult Education Association of the United States of America, 1952, P. 8.

³⁹ Adult Education Ideas, Op. Cit., P. 1.

"An estimated three-fourths of all districts above 2,500 population (including those not reporting) provide some kind of education for adults. A minimum of 40 per cent of all districts above 2,500 population claim to have evening or adult schools even if nonresponse to the inquiry represents the absence of such schools."⁴⁰

In the same survey Kempfer found that over four-fifths of the districts surveyed under 2,500 population reported adult education activities and two fifths conducted evening or adult classes.⁴¹ Evidence that adult education is broad in scope is also supported by the Kempfer study when he says that approximately 3,000,000 adults and out-of-school youth were provided some type of organized education in 1947-48.⁴² This enrollment figure was approximately equal to three-fourths the combined high-school and elementary-school enrollment for 1947-48. Kempfer also reported that activities for adults in the recreational and vocational fields were much more widely distributed than activities in any other field.⁴³

⁴⁰ Homer Kempfer, Adult Education Activities of the Public Schools, Report of a Survey, 1947-48. Pamphlet No. 107, U. S. Office of Education, Washington, D. C.: Government Printing Office, 1949, P. 20.

⁴¹ Ibid., P. 20.

⁴² Ibid., P. 21.

⁴³ Ibid., P. 20.

The study made by Kempfer through the United States Office of Education provides ample evidence that adult education is a significant part of public education and that many people are participating in adult education activities provided by the public school. One can also conclude that vocational education is an important part of adult education and that rural adult education is a significant part of adult education in the nation.

This information shows the nature and extent of public-school adult education in the United States and the need for continuous appraisal of such an important and expanding part of public-school education.

An important segment of public-school adult education is education in vocational agriculture.

Careful appraisal is needed of the education that is affecting the social and economic change occurring in the rural population which is declining in proportion to the total population but increasing in importance compared to its earlier status.

A study of Table I shows that the total population of the United States has risen approximately 50 per cent while the rural farm population has dropped nearly 30 per cent during the lifetime of most men now teaching vocational agriculture. For

TABLE I

POPULATION OF THE UNITED STATES AND OF NINE NORTH CENTRAL STATES
FOR 1920 AND 1950

	Total population (000 omitted)		Rural ⁴⁸ population (000 omitted)		Rural farm population (000 omitted)	
	1920	1950	1920	1950	1920 ⁵³	1950 ⁵⁴
United States	105,711 ⁴⁴	150,697 ⁴⁶	51,552 ⁴⁹	54,230 ⁵¹	31,614	23,048
Illinois	6,485 ⁴⁵	8,712 ⁴⁷	2,082 ⁵⁰	1,953 ⁵²	1,098	763
Indiana	2,930	3,934	1,448	1,577	907	667
Iowa	2,404	2,621	1,529	1,370	985	783
Kentucky	2,417	2,945	1,783	1,861	1,305	974
Michigan	3,668	6,372	1,427	1,869	849	695
Minnesota	2,387	2,982	1,336	1,358	897	740
Missouri	3,404	3,955	1,817	1,522	1,211	863
Ohio	5,759	7,947	2,082	2,368	1,139	853
Wisconsin	2,632	3,435	1,387	1,447	920	725
Total for nine states	32,086	42,903	13,891	15,325	9,311	7,063

⁴⁴ 1950 Census of Population, Volume I, Number of Inhabitants. Washington: U. S. Government Printing Office, 1952, P. 1-3.

⁴⁵ Ibid., P. 1-8.

⁴⁶ Ibid., P. 1-3.

⁴⁷ Ibid., P. 1-17.

⁴⁸ Ibid., P. xv. "According to the new urban definition that was adopted for use in the 1950 census, the urban population comprises all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs and villages, (b) incorporated towns of 2,500 inhabitants or more . . . , (c) densely settled urban fringe, including both incorporated and unincorporated places of 2,500 inhabitants or more outside any urban fringe. The remaining population is classified as rural". In the old urban definition,

FOOTNOTES TO TABLE I CONTINUED.

urban population was limited to all persons living in incorporated places of 3,500 inhabitants or more and in areas classified as urban, under special rules relating to population size and density.

⁴⁹Ibid., P. 1-17.

⁵⁰Ibid., P. 1-19.

⁵¹Ibid., P. 1-17.

⁵²Ibid., P. 1-19.

⁵³1945 United States Census of Agriculture, General Report. Volume II, Part 1-6, Chapter V. Washington: U. S. Government Printing Office, 1947, P. 292.

⁵⁴1950 United States Census of Population, General Characteristics, (New Urban Classification Used). Washington: U. S. Government Printing Office, 1952, P. 1-105.

the nine states in this study the same trend is present but to a lesser degree. The trend toward fewer people producing an increasing supply of food puts a high value on the ability of farm people to produce the food needed for the nation.

Comparing column one with column two in Table II, it can be seen that there were approximately 15 per cent fewer farm operators in 1950 than in 1920. The slower rate of decrease in the number of operators than in the numbers of people on farms may indicate that the size of the farm family is smaller now than 30 years ago. The farm family has been and is today an important source of farm labor. The decrease in people per farm can be linked with the information presented in Table III. A real revolution in the use of labor has occurred. The phenomenal increase in trucks and tractors on farms is indicative of the technical nature of the production of food and fiber. Paralleling the increase in the number of trucks and tractors is an increase of other types of farm machinery and equipment.

With each year come new needs for the development of many technical and managerial abilities which farmers must have if they are to keep pace with technical and social change. Vocational education in agriculture is one of the important avenues of education farmers use to develop these abilities.

TABLE II

NUMBER OF FARM OPERATORS IN THE UNITED STATES AND IN NINE NORTH
CENTRAL STATES FOR 1920 AND 1950

	Farm operators ⁵⁵	
	1920 ⁵⁶	1950 ⁵⁷
United States	6,448,343	5,379,250
Illinois	237,181	195,212
Indiana	205,126	166,638
Iowa	213,439	203,155
Kentucky	276,626	218,237
Michigan	196,447	155,519
Minnesota	178,478	179,119
Missouri	263,041	229,958
Ohio	256,695	199,220
Wisconsin	189,295	168,582
Total for the nine states	2,016,328	1,715,640

⁵⁵ Operators include full owners, part owners, managers, tenants, (cash, share, croppers and others.)

⁵⁶ Fifteenth Census of the United States, 1930. Agriculture. General Report, Volume IV. Washington: U. S. Government Printing Office, 1932, P. 162.

⁵⁷ 1950 Census of Agriculture, General Report, Volume II. Washington: U. S. Government Printing Office, 1952, P. 113.

TABLE III

NUMBER OF TRACTORS AND FARM TRUCKS IN THE UNITED STATES AND IN NINE
NORTH CENTRAL STATES IN 1920 AND 1950

	Tractors ⁵⁸		Trucks ⁵⁹	
	1920	1950	1920	1950
United States	240,083	3,609,281	139,169	2,206,670
Illinois	23,102	234,789	6,154	86,776
Indiana	9,230	153,980	3,671	59,811
Iowa	20,270	240,941	8,910	62,375
Kentucky	2,029	58,818	1,538	54,957
Michigan	5,884	149,377	4,886	56,966
Minnesota	15,503	204,200	3,803	70,357
Missouri	7,889	125,536	5,059	77,250
Ohio	10,469	182,481	7,319	64,780
Wisconsin	9,402	171,433	4,044	74,454
Total for nine states	103,778	1,521,555	45,384	607,726

⁵⁸Ibid., P. 226.

⁵⁹Ibid., P. 223.

Figure 1 gives a graphic presentation of the rapid growth in the number of people enrolled in classes in vocational agriculture. Technical changes in farming call for education on current technical, social and economic problems which in part account for the great increase in adult-farmer enrollment. The response of young and adult farmers to education in current problems is shown in Figure 1 by the young-farmer and adult-farmer enrollments which together approach the high-school enrollment. Although Figure 1 shows a decrease in adult-farmer enrollment during World War II, there was a great increase in enrollment (not shown) due to the Food Production and War Training classes taught by special and regular teachers. The peak of new enrollments in the Food Production War Training Program was reached in 1943-44 when 1,340,886 farmers received instruction.⁶⁰ Lack of teachers and young farmers caused the decrease in the high-school and young-farmer programs during World War II.

Table IV shows the adult-farmer class enrollment for the United States and for each state in this study for the 1952 fiscal year.

⁶⁰ Vocational Education in the Years Ahead. Vocational Division Bulletin, No. 234, Federal Security Agency, Washington, D. C., 1945, P. 131.

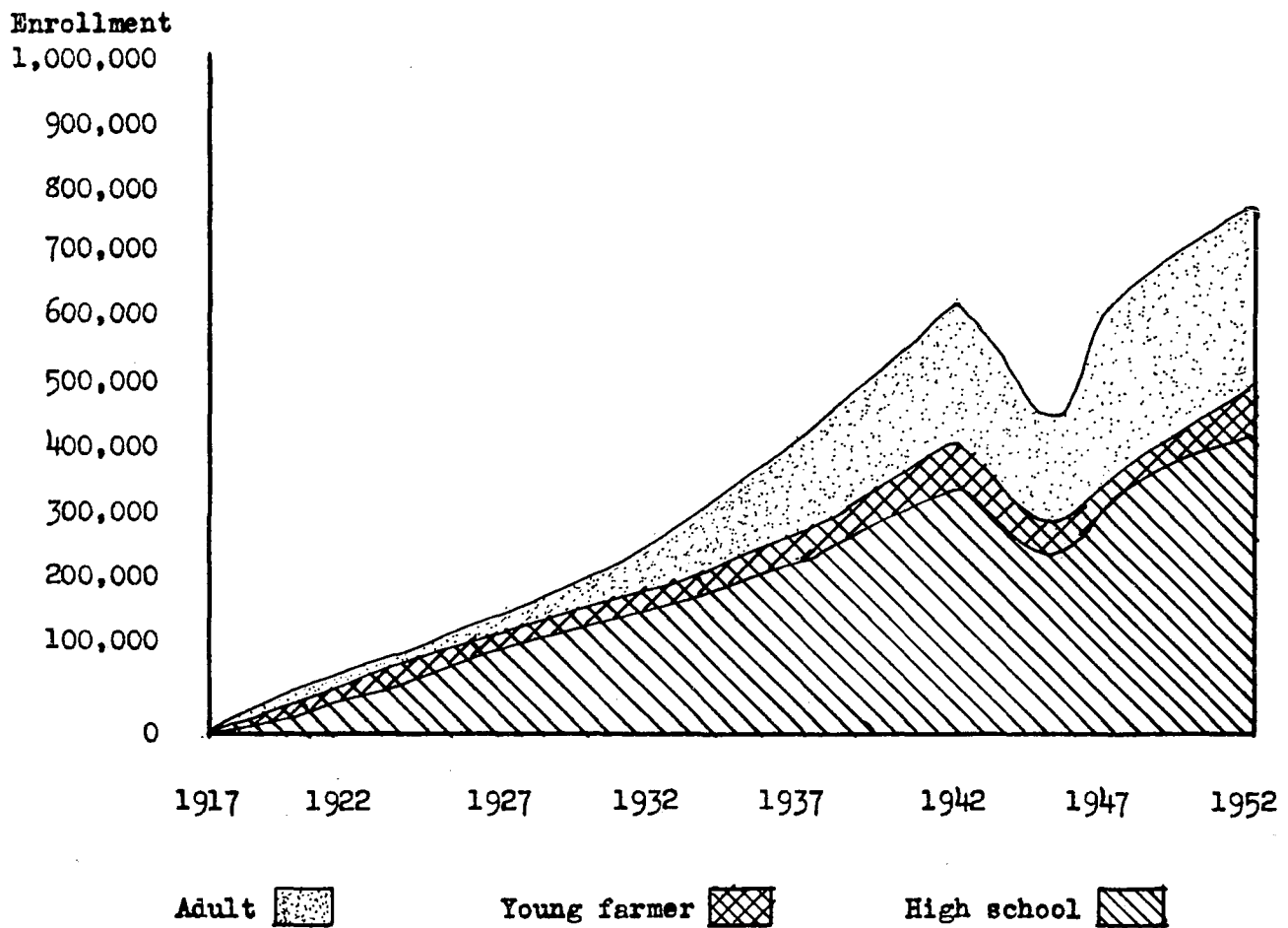


Figure 1. Enrollment in Vocational Agriculture Classes
In The United States by Types of Classes⁶¹

⁶¹ Digest of Annual Reports of State Boards for Vocational Education. U. S. Department of Health Education and Welfare, Washington, D. C., 1952, P. 18.

TABLE IV

ENROLLMENT IN ADULT CLASSES IN VOCATIONAL AGRICULTURE IN THE
UNITED STATES AND IN NINE NORTH CENTRAL STATES IN 1952

	Enrollment ⁶²
United States	271,160
Illinois	11,590
Indiana	1,159
Iowa	12,384
Kentucky	3,204
Michigan	9,084
Minnesota	12,450
Missouri	7,202
Ohio	3,128
Wisconsin	4,578
Total for nine states	64,779
Percentage of U. S. enrollment in the nine states	23.9

⁶²
Ibid., P. 19.

The data presented in the Tables I - IV and Figure 1 can be analyzed to draw some significant conclusions:

1. The importance of farming is increasing as the percentage of farmers becomes lower in relation to the total population.
2. Agriculture is becoming a highly specialized occupation as evidenced by fewer farmers producing the food needed by more people. (The net import of food is small compared to total food produced in the United States).
3. Farmers are enrolling in increasing numbers for systematic instruction in vocational agriculture.
4. As the number of farmers who are enrolled in classes in vocational agriculture increases there is a need to appraise critically the results of instruction firstly to determine the benefit to the farmer and secondly to determine the benefit to society.
5. During the 1952 fiscal year 5.04 per cent of the farm operators in the United States were enrolled in adult classes in vocational agriculture. What is the significance of this enrollment? Is it high enough compared to total numbers of farmers? If it isn't high enough what are the factors that prevent higher enrollment? Who are the clientele served by the classes? Are all farmers

who want, need or can use instruction, obtaining it?

What are some of the characteristics of the farmers enrolled such as degree of farm ownership, farm income, rural leadership, citizenship, etc.?

In the nine states in this study there were 3.3 per cent of the farm operators enrolled in adult classes in vocational agriculture compared to 5.04 in the nation as a whole. What causes this difference in percentage of enrollment?

All the above observations point out the need for the discovery and implementation of good evaluation practices necessary for the appraisal of adult education programs in vocational agriculture. As the number of farm operators becomes fewer and enrollments in adult classes in vocational agriculture become greater, more emphasis must be given to a critical analysis of the results of instruction.

Leaders in the field of agricultural education have repeatedly voiced the need for good evaluation. H. H. Gibson stated that the big need in agricultural education was for more democratic program planning and evaluation.⁶³ He made this observation

⁶³H. H. Gibson, "Trends and Developments in Agricultural Education as Noted on a Recent Tour of the United States." The Agricultural Education Magazine, 21: 14, July, 1948.

following a tour of the United States in which he visited many teacher-education programs in vocational agriculture and many communities where vocational agriculture was taught. He observed that people in the college education programs and in the educational programs in local communities had taken renewed interest in program planning and evaluation.

At an earlier date, Byram voiced the need for finding new and better ways of detecting outcomes of instruction and measuring them against valid objectives.⁶⁴ He suggested that less attention be given to tradition or imaginary standards in research in agricultural education.

For at least two decades Hamlin has given strong support to the need for effective adult education in vocational agriculture. In 1933 he stated that:

"Outcomes in adult education in vocational agriculture have as yet been measured in terms of changed farm practices. This is a very inadequate criterion and may not correlate with the really important possible results from such instruction."⁶⁵

⁶⁴Harold M. Byram, "Some Directions Research is Taking in Determining How Agricultural Education in the Secondary School Measures Up". The Agricultural Education Magazine, 13:194, April, 1941.

⁶⁵Herbert M. Hamlin, "Summary of Measurement Studies in Agricultural Education". The Agricultural Education Magazine, 6:96, December, 1933.

In 1937, Hamlin called attention to program planning and evaluation.⁶⁶ He urged that agricultural planning be integrated with other local, county, state and national agencies. He urged a community-wide approach to planning and evaluation for agricultural education.

Hamlin gave emphasis to a broad program of adult education in vocational agriculture by listing the values of such education.⁶⁷ These include:

1. The development of a cooperative attitude in the community.
2. The development of leadership
3. The tendency to equalize opportunity
4. The help provided adults to become more self-dependent
5. The aid provided constructive agricultural agencies now functioning.

Additional views of Hamlin are presented to show the breadth needed for adequate evaluation in adult education. In 1943 he wrote that the values of evening schools in vocational agriculture included:⁶⁸

⁶⁶Herbert M. Hamlin, "Agricultural Planning and Agricultural Education." The Agricultural Education Magazine, 10:64, October, 1937.

⁶⁷Herbert M. Hamlin, "Why Concern Ourselves With Part-Time and Evening Classes." The Agricultural Education Magazine, 14:48, September, 1941.

⁶⁸Herbert M. Hamlin, "Values of Evening Schools." The Agricultural Education Magazine, 15:17, March, 1943.

1. The preservation of morale and a sense of unity among those who participate
2. The radiation of morale and a sense of unity to the whole community
3. The feeling of sharing in a great undertaking
4. The preservation and extension of democracy, free speech, discussion, and privilege of assembly
5. The development of enlightened and effective public opinion
6. The development of favorable attitudes toward elementary and secondary schools
7. The addition of a major contribution to the general program of adult education

In taking a forward look at evaluation in 1948 Hamlin stressed three points:⁶⁹

1. The importance of evaluation must be realized. "Agricultural education will usually be no better than evaluation applied to it."
2. "We can start with ourselves in improving evaluation."
3. "There must be an improvement in evaluation in teacher education."

Evaluation in adult education in vocational agriculture may be summarized on the basis of need. Evidence for need of evaluation of adult education in general, of which agricultural

⁶⁹ Herbert M. Hamlin, "What Next in Evaluation." The Agricultural Education Magazine, 20:235, June, 1948.

education is a part, was pointed out by the increasing participation in adult education and by statements of leaders in the field.

The need for evaluation in adult education in vocational agriculture was shown by the increasing number of farmers who are enrolled in adult classes, the importance of adequate instruction for this basic segment of the population and the opinions of leaders in the field of agricultural education.

Scope of the Study

Adult education in vocational agriculture, a segment of adult education, was selected for special study. The study included a philosophical description of criteria which were appraised by selected judges and a check-list description of criteria for a good program of adult education in vocational agriculture which was checked by teachers in nine states. A search of the literature also produced a list of evaluation practices which were either recommended and/or used for evaluation in not only adult education in vocational agriculture but also in general adult education. The relative value of the practices was not known.

The study was designed to include a random sample of programs conducted during 1951-52 in adult education in vocational

agriculture in eight north central states. The states were Illinois, Indiana, Iowa, Kentucky, Minnesota, Missouri and Wisconsin. In addition to the programs in these eight states all Michigan programs were used in the study. The teachers in the survey were asked to fill out a questionnaire only on their 1951-52 programs.

Limitations of the Study

The study was limited to adult education in vocational agriculture although parts of the study might apply to all of agricultural education and/or to general adult education. Only states in the North Central area of the United States were included. This decision was made to provide breadth to the study and yet limit it to the corn-belt area where agricultural conditions in each state are somewhat similar. The nine states in the study are also part of 13 included in the North Central Region which is designated as such by the United States Office of Education to provide working relations in research and other problems concerning personnel in vocational education in agriculture.

No study was made of the effects of age of teacher, years of teaching vocational agriculture, years of teaching adult farmers in vocational agriculture, size of community or size of school.

The study was limited to an analysis of practices of evaluation now in use or suggested for use. There was no effort to analyze the value of practices that were declared good in the past and abandoned. Neither was there an appraisal of the projected value of evaluation practices. The analyses made in this study apply to current conditions.

In conducting the study two limitations were noted. The judges of the criteria would have preferred a different method to use in accepting or rejecting criteria. If provision could have been made for more discrimination than an "agree" or "disagree" opinion, it might have allowed more refinement in the validity of the opinions. The section on comments in the questionnaire apparently was used to give divergencies to "agree" or "disagree" checks. The ideas presented in the comments were used in building the criterion measures.

It was also difficult to provide adequate measures for the criteria. Criterion I, "Relative Size of Program" may have been found invalid because inadequate measures were used. With emphasis on systematic instruction in adult education in vocational agriculture, which means working with the same group of farmers in organized instruction throughout the year and to some extent from year to year, the total hours of instruction may be-

come large but the number of farmers in a class may be small.

The emphasis is not placed on the number of farmers enrolling in "courses" of one or two meetings but rather on the number of farmers enrolling in courses of ten or more meetings. An improved method of measuring the "relative size of program" for adult education in vocational agriculture is needed which would provide for refinement in measuring "relative size" where a small percentage of the total population is involved. This study did not provide for measures of relative size "over a period of time" or "increase in numbers" since data were collected for only one year, 1951-52.

The criterion, "results", also was difficult to measure. It contained the widest range of scores when compared to other criteria. Either there was a great difference in results in the programs reported or there was a great difference in reporting results. What some teachers may have considered an approved farm practice may not have been considered an approved farm practice by other teachers. Some teachers may have had inadequate records from which to secure information on the criterion measures. Even though the questionnaire was tried out and revised before final circulation, some of the problems in the use of the questionnaire were not fully detected. It is doubtful if all the problem situations could have been fully alleviated unless interviews

had been conducted in all communities participating in the study. The inability to develop clear and decisive measures for each criterion may have accounted for some of the lack of interrelation in the statistical analyses of four of the ten criteria. The presence of contaminating factors may have contributed also to the lack of interrelation of four criteria.

Following the statement of the problem, its scope and limitations, there comes a need to review investigations of a similar nature in education.

CHAPTER II

REVIEW OF LITERATURE

This chapter deals with various types of research studies in evaluation in adult education with emphasis on those in vocational agriculture. In some instances, statements from leaders in the field supplement the research data presented. The studies reviewed and reported in this chapter are classified into three groups. These groupings are informal, formal and a combination of the two. The informal studies consist of evaluation carried out largely by local people in face-to-face contact in a community. The formal studies include face-to-face contact but the evaluation is done largely by people from outside the community. The statistical type study is also included in this group. The third group includes a combination of the formal and informal studies.

Studies in Which Informal Methods Were Used

In the early 1940's two comprehensive research programs were launched in agricultural education which had as their basis two opposing philosophies of evaluation. One had as its basis the use of local people in determining the value of local programs

of adult education. The proponents of the opposing philosophy, which will be outlined in the next section, indicated that national standards should be established and that these standards should be the basis for evaluating local programs of agricultural education.

In defense of the first point of view, Hamlin, in 1940, stated that evaluation must:¹

- "1. Be in the hands of the people who control the schools;
2. Use outsiders to assist and not to substitute for local people;
3. Deal principally with outcomes rather than principally with ways and means."

He indicated that program planning and evaluation were the most critical problems facing agricultural education. Hamlin emphasized that educational objectives must be established and that criteria must be set up in advance for the objectives which are to be measured. This was the basis for the criticism which Hamlin gave the membership of the Committee on Standards of the Agricultural Education Section of The American Vocational Association, who were in the process of establishing national standards to be used in evaluating local programs of agricultural education.

¹Herbert M. Hamlin, "Planning and Evaluation in Agricultural Education." The Agricultural Education Magazine, 13:204-207, May, 1941.

The philosophy of Hamlin presented in the preceding paragraph provided the background for the rebuttal by him later in the same year. He re-emphasized his point of view which is summarized in the following statements:²

1. Evaluation should be done by local people.
2. Evaluate outcomes and results rather than processes and procedures.
3. Appraise the product.

As indicated by the title, the above statements were a rebuttal to a report from the "Committee on Standards" which was composed of leaders in the field of agricultural education. It is noted in the "rebuttal" article that Hamlin proposed to establish a study to run for five years in which a test would be made of his point of view. The experiment was to be conducted by encouraging several high schools in Illinois to follow his suggested procedure for evaluation. As a result of his action six schools entered the project.

At the close of the first year of the experiment, Hamlin reported that a start had been made in evaluation and that five

² Herbert M. Hamlin, "A Rebuttal." The Agricultural Education Magazine, 14:27, August, 1941.

evaluation practices had been used, namely:³

1. The community survey was repeated (one was made at the beginning of the project)
2. Individual record forms were used to show progress in farming efficiency
3. Specially constructed pencil and paper tests were used to determine progress
4. Appraisals were made by people in the classes and others in touch with the work
5. Appraisals were made by professional workers from the outside

The first report on the study indicated that certain evaluation practices were being used but no weight or value was attached to one practice over another. A question could be raised concerning the validity of any or all of these practices.

Two years later, in 1943, Hamlin gave a report covering the first three years of the study.⁴ In this report he listed four practices of evaluation which were used in the six schools. The practices were:

³Herbert M. Hamlin, "One Year of Program Planning and Evaluation." The Agricultural Education Magazine, 16:54, September, 1943.

⁴Herbert M. Hamlin, "Three Years of Program Planning and Evaluation." The Agricultural Education Magazine, 18:36, September, 1945.

1. One day evaluations including outsiders were conducted in three communities. This group included teachers, principals, supervisors in agricultural education, university professors in agricultural education and staff members of the United States Office of Education.
2. Special attention was given to production records as a means of diagnosis of needs which formed the basis of teaching and aided in evaluation.
3. Each community made a further study of needs and refined its objectives.
4. Future plans were made for open houses, more publicity and more emphasis on evaluation.

At the close of three years it can be noted that the scope of this evaluation process had increased. More people were involved in evaluation and more phases of the programs were included. At this point it is not clear which practices in evaluation are to be recommended.

Hamlin partially answered this question in his report made at the close of five years of study in the six schools.⁵ In a humble way he stated that he had not discovered all the answers to good evaluation. He did venture nine recommendations, based on his five-year study, which were as follows:

- "1. The importance of evaluation must be realized.
"Agricultural education will usually be no better than evaluation applied to it."

⁵Herbert M. Hamlin, "What Next in Evaluation." The Agricultural Education Magazine, 20:235-237, June, 1948.

2. Improvement in evaluation must start with ourselves.
3. Methods of evaluation must be improved in teacher education.
4. More emphasis must be placed on quality as compared to quantity.
5. The community must become interested in evaluation.
6. Evaluation must be democratic.
7. More research time must be provided for evaluation.
8. Methods of evaluation should be studied which will include laymen, students, teachers, administrators, supervisors and teacher trainers.
9. More adequate objectives must be developed in terms of which to evaluate."

This type of summary certainly defines work yet to be done in evaluation, all of which applies to adult education in vocational agriculture. Some good practices in evaluation evolved from the five-year study but there was a lack of criteria which could be used to identify the quality of the practices. As an example Scott,⁶ the teacher of vocational agriculture in one of the six schools, reported that three evaluation practices had been used in his community. These were:

⁶ M. J. Scott, "Community Study Serves As a Basis for Improved Program." The Agricultural Education Magazine, 19:157, February, 1947.

1. The advisory council evaluated the progress toward specific objectives.
2. The advisory council aided in establishing objectives and goals.
3. The advisory council decided what to take out of the program as well as what to put in.

These practices are considered good by many professional and lay people. By many means of evaluation the programs conducted by Scott and the teachers in the other schools in the five-year study would be considered good. Yet a satisfactory means is not known at this point which will aid in deciding the quality of evaluation practices, unless a point of view is taken that anything that works is good.

A study that considers the factors of quality was one conducted by Knut⁷. He reviewed the literature on objectives and evaluation, criticized and consolidated proposed principles and applied these best ideas and innovations to five programs of agricultural education in a cooperative field study. His study resulted in a clarification of the relation between objectives and evaluation. Knut⁷ found that teachers, high school students,

⁷ Leo L. Knut, "Procedures for Determining Objectives and Evaluating Outcomes in Agricultural Education." Unpublished Doctor's Thesis, Library, University of Illinois, Urbana, 1950. (From Summaries of Studies in Agricultural Education, supplement No. 4, Vocational Division Bulletin No. 246, Federal Security Agency, P. 28.)

young farmers and adult farmers were interested in determining the purposes of their education, in expediting its processes and evaluating its results. In reporting on Knuti's work Hamlin listed four criteria on which the objectives were to be based.⁸

These criteria were:

1. Will its realization contribute to my psychological, social, economic or other needs?
2. Will its realization help others?
3. Is it feasible for me now?
4. Is it consistent with my general aims and those of my school?

This is evidence that there is movement away from a somewhat pragmatic approach of evaluation to an approach where underlying goals of a democratic society are used to establish the basis for objectives and evaluation.

Similar to the study made by Hamlin in the six schools was one made by Schroeder.⁹ As the director of a local program of community improvement through adult education in vocational agriculture, he worked with an advisory council to establish ob-

⁸ Herbert M. Hamlin, "Students Can Share". The Agricultural Education Magazine, 23:111, November, 1950.

⁹ Walter P. Schroeder, "A Case Study of The Development and Evaluation of a Program of Agricultural Improvement with Adults in the Olivet, Michigan, Community." Unpublished Master's Thesis, Library, Michigan State College, East Lansing, 1947, 185 pp.

jectives, to guide the program and to evaluate results.¹⁰ Evaluation with the help of the advisory council composed of local and county people, included quantitative checks on objectives and goals in three areas of farming. Qualitative evaluation was made on leadership development and social change in neighborhood groups as a result of using special teachers for adult classes.¹¹

An attempt was made to measure quality of program, yet the evaluation lacked the development and use of criteria which should form the basis for value judgments.

A less comprehensive evaluation of the same program was conducted by Schroeder in 1949.¹² A survey using an interview schedule was used with a random sampled group of 17 adult-class participants. The technique was based on a commonly-accepted principle that participants in classes help evaluate the instruction. Seven special teachers of classes and five local school administrators and teachers of vocational agriculture were interviewed with essentially the same schedule. In general, responses were similar.

¹⁰Ibid., P. 33.

¹¹Ibid., P. 17.

¹²Walter P. Schroeder, "Developing the Program of Adult Education in Agriculture at Olivet (Michigan) With Special Attention Given to Follow-up Instruction." Unpublished problem, Department of Agricultural Education, Michigan State College, East Lansing, 1949, 25 pp.

Again, the quality of this practice of evaluation has not been proven nor has it been validated in terms of established criteria. However, the author did indicate strengths and weaknesses in the program as found by the study. Plans were listed for making improvements.

Diggins,¹³ Wall¹⁴ and Ayers¹⁵ each conducted interview-type studies to determine the effect of instruction on approved practices adopted. As might be expected, all three men found that agricultural practices were improved through adult-farmer instruction. This type of evaluation is very prevalent in agricultural education. The technique is widely reported in articles in The Agricultural Education Magazine. It appears that more emphasis is given to checking the adoption of approved practices than to any

¹³Ronald V. Diggins, "Influence of Adult Agricultural Evening Schools Upon the Farm Practices of Those Attending." Unpublished Master's Thesis, Library, Iowa State College, Ames, 1940, 62 pp.

¹⁴Alexander Robert Wall, "A Study to Determine Some of the Influences Effecting the Trial and Completion of Improvable Farm Practices by Evening School Students." Unpublished Master's Thesis, Library, Virginia Polytechnic Institute, Blacksburg, 1935, 129 pp.

¹⁵Thomas Lawrence Ayers, "Effectiveness of Agricultural Evening Class Instruction." Unpublished Master's Thesis, Library, George Peabody College for Teachers, Nashville, Tennessee, 1929, 61 pp. (From Summaries of Studies in Agricultural Education, Vocational Education Bulletin No. 180, Federal Security Agency, Washington, D. C., p. 23.)

other method of evaluating instruction in adult education in vocational agriculture. Again one could question whether this is the best method of evaluation. If it is the best how much better is it than other methods?

Material from two well known sources gave added weight to the informal methods of evaluation. The first, The National Society for the Study of Education,¹⁶ reported in its Forty-Fifth Yearbook that future needs in evaluation include the use of:

1. Observations which collect all crucially relevant evidences¹⁷
2. Projective techniques such as public opinion polls¹⁸
3. Interviewing¹⁹

The second source was H. M. Hamlin,²⁰ He listed 23 predictions for adult education, the fourteenth of which deals

¹⁶"The Measurement of Understanding". Forty-fifth Yearbook of the National Society for the Study of Education, Part 1, 338 pp. Chicago: University of Chicago Press, 1946.

¹⁷Ibid., P. 327.

¹⁸Ibid., P. 328.

¹⁹Ibid., P. 329.

²⁰Herbert M. Hamlin, "The Future of Adult Education in Vocational Agriculture." The Agricultural Education Magazine, 17:84, November, 1944.

with evaluation. He stated that we should gradually get away from older forms of evaluation in adult-farmer courses, such as numbers of classes and attendance. The new approaches would include the use of indices of efficiency, records that indicate progress and other similar indicators of results. As objectives become clearer to teachers, class members and other evaluation becomes more sound. Hamlin added that evaluators must recognize more fully some of the by-products which often are more important than the principally-sought-for practices. These by-products include growth on the part of the farmer students in cooperativeness, in public spirit, in interest in farming, in home and family living and in community living.²¹

The informal type of study in evaluation in adult education in vocational agriculture has as its core the involvement of local people in making the evaluation. In a democracy this is essential. Many improvements in adult education have come undoubtedly from this type of evaluation. Yet what are the criteria which form the basis for evaluation? Who decides what the criteria should be? How are the criteria determined? These questions must be answered even before objectives are established. The two re-

²¹Ibid., P. 84.

maining sections of this chapter deal with different approaches to evaluation, some of which have criteria.

Studies in Which Formal Methods Were Used

The formal type research as reported in this section deals with the studies where there was little face-to-face contact in the evaluation process or where the evaluation was conducted in a "formal" atmosphere by one or more persons not directly concerned with the community where the evaluation occurred. In many cases the statistical type of study is used as part of the method or as the main method.

One of the leading formal studies in evaluation in vocational agriculture, which included adult education, was the study conducted by the National Committee on Standards of the Agricultural Section of the American Vocational Association. It was this study that prompted H. M. Hamlin to use the approach to evaluation which was described in the previous section.

The National Committee on Standards, mentioned in the previous paragraph, formulated the criteria on which the local evaluations were to be made.²² These criteria were tried out in

²²An Evaluation of Local Programs of Vocational Education in Agriculture. Vocational Division Bulletin No. 240, Federal Security Agency, Washington, D. C.: Government Printing Office, 1949, 75 pp.

local departments in eight states. Following this procedure the criteria were revised and issued by the American Vocational Association under the title Evaluative Criteria for Vocational Education in Agriculture. At the same time the Office of Education issued two miscellaneous publications. One was entitled Guide to Advance Preparation for the Evaluation of a Local Program of Vocational Education in Agriculture. The other was Directions for the Use of Evaluative Criteria for Vocational Education in Agriculture. J. C. Wright, assistant commissioner for Vocational Education, invited all state directors of vocational education to participate in the local evaluations. Evaluation committees were appointed in the 46 states whose directors accepted the invitation. Following this step, "local programs were selected in such a way as to obtain a representative sampling of departments."²³ It was apparent that state-level workers made the selection of each department on the basis of criteria which might not have been valid.

In many states a state supervisor and a teacher trainer used the evaluative criteria in making the local evaluations.

²³Ibid., P. 2.

This procedure may have met with some resistance in local schools.

Following the local evaluations a committee constructed 20 descriptive scales for use in local departments. In each scale there was a description of "Very superior," "Superior," "Average," "Inferior" and "Very inferior" programs, courses, situations, schools, teachers and units.²⁴ There were two scales including 17 items which could be used to evaluate organization and instruction of evening schools. Items not in the scales presumably were not evaluated. There might be a handicap in using the scales which were listed because evaluation practices were omitted.

A revised edition of the evaluative criteria was published in 1942.²⁵ It was then that this group suggested the use of self evaluation in the evaluation process. The 1942 edition had limited publication and therefore limited use. This publication had three "propositions" which are comparable to criteria for adult farmer education. These propositions dealt with the areas of activities of farmers, the course of study and instruction.²⁶

²⁴Ibid., P. 3.

²⁵Evaluation Criteria for Vocational Education in Agriculture, Revision for Evaluation or Self Evaluation of Teachers of Vocational Agriculture. Federal Security Agency and American Vocational Association, Washington, D. C., 1942. 75 pp.

²⁶Ibid., P. 49.

These propositions were established by leaders in agricultural education and were revised after they were tried out with the measures in local schools. The propositions were changed very slightly from the 1940 edition.²⁷ An attempt was made, therefore, to validate the propositions and the measures. Other methods of validation might yield different results.

The whole attempt at evaluation by the National Committee on Standards was defended by Fife when he stated that the effort was a guide to local evaluation.²⁸ Fife again came to the defense of the "standards" idea when he replied to Hamlin that there is more than one way to evaluate.²⁹

The results of the work of the National Standards Committee have been used to some extent in teacher education work in agricultural education. Apparently neither the self evaluation bulletins published in 1942 nor bulletin number 240 have had wide use in local departments in improving any phase of the agricultural education.

²⁷Evaluative Criteria for Vocational Education in Agriculture. Federal Security Agency and the American Vocational Association, Athens, Georgia; University of Georgia Press, 1940. 52 pp.

²⁸Ray Fife, "Evaluating Agricultural Education - A Reply." The Agricultural Education Magazine, 14:6, July, 1941.

²⁹Ray Fife, "Evaluation - Another Reply." The Agricultural Education Magazine, 14:67, October, 1941.

Two studies were reviewed in which the material prepared by the National Standards Committee was used. Mitchell administered the 1940 edition of the evaluative criteria to 11 departments in Georgia.³⁰ He computed intercorrelations of the weighted scores from the various sections and drew two types of conclusion.³¹ In the first type he drew two conclusions on adult-farmer education, namely: that adult-farmer instruction should be organized to provide favorable learning conditions, and that this type of education should have the support of the school and community. Mitchell's second type of conclusion was that the "National Evaluative Criteria should be revised for more effective application for evaluation or self-evaluation of teachers of vocational agriculture in Georgia."

The work by Mitchell was scientific and well written. His analysis was short and he made no explanatory comments on how local objectives might be established and how local evaluation was to proceed.

³⁰ John Hubert Mitchell, "Evaluation of Local Programs of Vocational Education in Agriculture in Georgia." Unpublished Master's Thesis, University of Georgia, Athens, 1942, 133 pp.

³¹ Ibid., P. 49.

The second study to be reviewed which made use of the National Evaluation Criteria was done by Patrick.³² He attempted to determine in what different ways and by what means the vocational agriculture department could assist the local school in improving the quality of living in the community.³³

As a part of the total evaluation, three teachers applied the 1942 edition of the evaluative criteria as prepared by the National Committee on Standards. Data on the community collected by the state statistician were used also.³⁴

In his conclusions, Patrick made one observation on the adult program by saying that it received a superior rating based on evaluative criteria.³⁵ His recommendations stated that a general evaluation should occur every five years and a specific evaluation every 10 years. This comment was prompted in some degree by the fact that the high school faculty did not have the objectives of vocational agriculture in mind. Patrick also stated

³²James Leon Patrick, "An Evaluation of the Chocowinity Agricultural Department and Local School Program With Suggestions for Changes Towards the Further Promotion of Individual and Community Development." Unpublished Master's Thesis, Library, University of North Carolina, Raleigh, 1951. 135 pp.

³³Ibid., P. 2.

³⁴Ibid., P. 4.

³⁵Ibid., P. 120.

that evaluative criteria should be drawn up by the state department of public instruction. This does not agree with a later point in which he stated that teachers in the school should be responsible for evaluation. Again in a contradictory manner, Patrick recommended that funds should be appropriated by the state legislature to employ personnel for organizational purposes whereby state-wide evaluation might be made possible.³⁶

It has become apparent that the trend is away from national standards in evaluation in adult education in vocational agriculture. This is evidenced in lack of use of the evaluative criteria as presented by the National Committee on Standards in Vocational Agriculture and the strength that local evaluation has assumed. This trend is shown throughout this chapter.

The most comprehensive formal study on adult education in vocational agriculture was done by Fleenor in 1931.³⁷ He secured lists of teachers and schools from state supervisors in 21 states. Seven-hundred-twenty-six questionnaires were sent to departments conducting adult classes during 1929-30. Although there was a 71.30 per cent return the sampling was highly skewed due to a

³⁶Ibid., P. 120.

³⁷Beatty Hope Fleenor, "Adult Education in Agriculture Through Evening Schools Conducted by Departments of Vocational Agriculture." Published Doctor's Thesis, University of Missouri, Columbia, 1931, 114 pp.

much larger percentage of departments reporting in some states than in others.³⁸ The study was made in seven areas, namely: instruction, organization, enrollment, methods, supervised practice, general results and specific results. This study presented the status of adult education in vocational agriculture in the states studied, barring inadequacies in sampling. The results of instruction were put in general and specific categories. The general results included such qualitative evaluations as progress in improved public relations between the school and community, cooperation among people and increased community pride.³⁹ The specific results were based largely on approved practices adopted.⁴⁰ Other such quantitative measures included enrollment and the number of farm visitations.

The study was a distinct contribution to the field of adult education in vocational agriculture because it was done approximately ten years after adult classes were first offered in vocational agriculture as a part of the Smith-Hughes program. The

³⁸ Ibid., P. 17.

³⁹ Ibid., P. 78.

⁴⁰ Ibid., P. 86.

study was broad in scope and comprehensive. The status of schools reporting was well presented. There was an attempt by Fleenor to establish criteria in seven areas of the program of adult education in vocational agriculture as described earlier. He did not go as far in developing criteria as did the National Committee on Standards yet there was more emphasis on the qualitative type of evaluation than any other study reviewed. The study would have been more valuable had evaluation practices been developed which people in local communities could have used.

C. L. Bunyard conducted a study in Iowa in 1930 that involved some new approaches to evaluation.⁴¹ He selected five schools similar in farming conditions, experience of teachers and adult class subjects. By using both sides of a three-by-five card, Bunyard developed a survey instrument which the teachers used with prospective students. The results of this survey were tabulated and criteria developed for seven areas of instruction in dairy and one area in cooperation.⁴² Objectives were then

⁴¹ Claude Lee Bunyard, "A Technique for Measuring The Effectiveness of Agricultural Evening Schools." Unpublished Master's Thesis, Library, Iowa State College, Ames, 1930, 99 pp.

⁴² Ibid., P. 8.

based on the criteria. Following this step, problems for study were selected, a course of study organized, records kept on instruction and progress of students determined by use of a measuring scale constructed from the predetermined criteria. The criteria which Bunyard listed as most significant were responses given by farmers through participation, number of improved practices adopted and attitude toward cooperation.⁴³ The criteria named by Bunyard could be listed in the category of evaluation practices. However, this study indicates that an attempt was made to find the foundation on which objectives were to be based.

An earlier study by Brown in California reported results from a survey of teachers in 35 states.⁴⁴ He received 279 returns from 483 teachers in which information was given on enrollment and meeting time data, organizational procedures and general information on courses offered and teaching personnel. From these data nine suggestions for promoting and teaching evening schools were drawn. Five centers were selected in California

⁴³
Ibid., P. 83.

⁴⁴
Ralph Newton Brown, "The Development of Agricultural Evening Schools in California." Unpublished Master's Thesis, Library, University of California, Berkeley, 1926, 72 pp.

where the procedures were tried for one year. Based on his observation, Brown chose two measures of evaluation which were "improvement in farm practice" and "approval of the program by farmers."⁴⁵ Brown also listed five acceptable procedures for organizing evening schools.⁴⁶ It is not apparent how Brown determined accomplishments in the evening school which was one of his purposes. He did an acceptable job in determining procedures to use in organization of an evening school. The programs in the five centers were well organized and the data collected indicated evidence that the two factors used in evaluation were valid for the year studied. The second factor in evaluation, which was approval of the program by the farmers, was determined by the percentage of the class that would attend another such course. This was the first time that such a practice had been noted.

A formal status study which provided a quantitative and community-wide analysis for evaluation was conducted by Brimmer.⁴⁷

⁴⁵Ibid., P. 53.

⁴⁶Ibid., P. 63.

⁴⁷Clifford Carl Brimmer, "The Personnel of Agricultural Evening School Classes in Iowa and Eastern Nebraska." Unpublished Master's Thesis, Library, Iowa State College, Ames, 1932, 51 pp.

He secured the help of 25 teachers in 19 communities in eastern Nebraska and Iowa in circulating 1010 questionnaires to farmers who attended evening school. Four-hundred-sixty questionnaires were returned. Brimmer drew four conclusions from the study regarding the age of the farmers, clientele reached, level of schooling and type of class participation by the farmers. He made only two recommendations for changes in the instructional program.⁴⁸ A further analysis of the data collected might provide suggestions for improvement in the programs in the local schools. Little information was presented which would lead to continuous evaluation or practices which others could use to evaluate a local program of adult education.

Strong evaluated the influence that outside speakers and certain types of courses had on enrollment and attendance and the resulting improved practices.⁴⁹ His method involved the use of postal-card questionnaires which 73 teachers sent to three regular and three irregular class participants. He also summarized the adult class record in the state office of education for 307

⁴⁸ Ibid., P. 48.

⁴⁹ Wayne D. Strong, "Organization of the Instructional Program in Agricultural Evening Schools in Iowa." Unpublished Master's Thesis, Library, Iowa State College, Ames, 1946, 56 pp.

schools. The technique had merit yet the reader was not informed either how the 73 teachers were selected or how the six farmers in each school were selected. Some generalized results were provided on the items studied but specific helps on the use of similar evaluation techniques were lacking.

Another type of status study was conducted by the agricultural extension service. Questionnaires were sent to 2,373 county and state extension workers in nine north central states in 1950.⁵⁰ About 95 per cent response was secured. The purpose of the study was to determine the value of the radio for extension work from the point of view of extension administrators. The result of the study indicated a need for training extension workers for radio broadcasting and a need for objective measures of the effectiveness of radio broadcasting.⁵¹ The method used to measure effectiveness of broadcasts appeared to have merit. Respondents were asked to cite evidence in any or all of seven categories for five jobs tried which were: change attitudes, make

⁵⁰ Lucinda Crile, Use of Radio by Extension Workers in the North Central States. University of Missouri, College of Agriculture Extension Service, Columbia, 1952, pp. 64.

⁵¹ Ibid., P. 6.

announcements, teach subject matter, stimulate participation and teach skills.⁵² Ninety-five per cent of the extension workers reported evidence of accomplishment in one or more of the five jobs tried by using the radio. The highest percentage of accomplishment was from 77 to 92 per cent, indicated by the county agents separately. The subject-matter specialists, men and women, reported evidence of accomplishment ranging from 60 to 95 per cent.⁵³

The study was well done, graphically portrayed and provided a thorough analysis of one type of evaluation in adult education.

Noakes made an historical study of the people and organizations in a New York community and a contemporary study of attendance and the program of adult education in the same community.⁵⁴ The program in adult education in vocational agriculture was compared with similar programs in other communities. This practice may have some merit in evaluation. In general, the study is loosely written and of low quality.

⁵²Ibid., P. 18.

⁵³Ibid., P. 19.

⁵⁴Harold L. Noakes, "A Study of Adult Education in Southern Cayuga County as Organized at Moravia High School." Unpublished Master's problem, Library, Cornell University, Ithaca, New York, 1940, 86 pp.

Studies done by Mobley,⁵⁵ Hull,⁵⁶ Johnson,⁵⁷ Knight,⁵⁸ and Cook⁵⁹ have as their basis the number of approved practices adopted by adult farmer class members as the means of evaluating local programs. This is a common method of evaluation and definitely quantitative in approach. This type of evaluation usually has an unwritten criterion on which the evaluation is based. It is assumed usually that the criterion of results with applications to farming is the one and only basis for judgment. As yet this has not been proven or disproven.

⁵⁵M. D. Mobley, "An Evaluation of Evening Class Instruction in Terms of Changed Practices." Unpublished Master's Thesis, Library, Cornell University, Ithaca, New York, 1930, 155 pp. (From Summaries of Studies in Agricultural Education, Vocational Division Bulletin No. 180, Federal Security Agency, Washington, D. C., P. 127.)

⁵⁶Joseph William Hull, "Effectiveness of Agricultural Evening Class Instruction in Western Arkansas." Unpublished Master's Thesis, Library, George Peabody College For Teachers, Library, Nashville, Tennessee, 1930, 82 pp. (From Summaries of Studies in Agricultural Education, Vocational Division Bulletin No. 180, Federal Security Agency, Washington, D. C., P. 94.)

⁵⁷Alex R. Johnson, "The Organization, Instruction and Results of Classes in Poultry Production." Unpublished Master's Thesis, Library, University of Florida, Gainesville, 1932, 52 pp.

⁵⁸F. K. Knight, "The Organization and Results of an Evening Class in Citrus." Unpublished Master's Thesis, Library, University of Florida, Gainesville, 1932, 80 pp.

⁵⁹Allen Cook, "Giving Evening Schools a Feeling of Permanence." The Agricultural Education Magazine, 3:169, May, 1931.

A study closely related to these was one done by Bryant⁶⁰ 70 in which he sent questionnaires to farmers and teachers in the same communities to determine the profitableness of teaching scientific and practical agriculture to adult farmers. He made a listing of the order in which greatest improvement occurred in farm enterprises. This is essentially an evaluation and rating of approved practices adopted.

The formal type of evaluation study in adult education in vocational agriculture has been based on the use of statistical methods or the "formal" atmosphere of outside people conducting evaluations in a local community, or a combination of these approaches. This type of study has value in that more objectivity may be possible than through the informal approach. As many of the studies in this area are status studies it is doubtful if the results have been highly usable. In cases where scales and techniques were developed for local use, there seemed to be a considerable gap between recommendations and use. There seems to be a need for combining the formal approach with its objectivity and the usability of the informal type of evaluation.

⁶⁰Nathan Daniel Bryant, "An Inquiry Into the Value of Teaching Adult Farmers." Unpublished Master's Thesis, Library, George Peabody College, Nashville, Tennessee, 1925, 52 pp. (From Summaries of Studies in Agricultural Education, Vocational Division Bulletin No. 180, Federal Security Agency, Washington, D. C., P. 36.)

Studies in Which Both Informal and Formal Methods Were Used

The final part of the review of evaluation studies in adult education in vocational agriculture deals with studies in which the informal, face-to-face contact and formal procedures were used.

One of the significant studies in this area was done by Guiler. He conducted a different type of evaluation than any other reviewed.⁶¹ It apparently is the only one of its kind. With the aid of an advisory council, seven judges in the field of agricultural education and the responses on questionnaires from 70 local class participants on the farming and social-civic status of the community, Guiler established criteria on which to base the evaluation and the objectives to use in the evaluation of adult education in agriculture in a local community. Using the objectives as a guide, a second questionnaire was circulated to local clientele to determine farming and social civic accomplishments.⁶²

⁶¹ Gilbert S. Guiler, "An Evaluation of the Program of Adult Education in Vocational Agriculture at Canal Winchester, Ohio." Unpublished Master's Thesis, Library, The Ohio State University, Columbus, 1951, 126 pp.

⁶² Ibid., P. 87.

The techniques developed were not complicated and could be carried out by people in local communities. There seemed to be a problem of classification of terms because there was overlapping of the same terms in both the criteria and objectives. For example, recreation was used in both categories. Another item listed in the criteria which probably does not belong there was length of class session. It is part of a criterion which might be classified under the heading of flexibility.

The study was well written and apparently local people were heavily involved in the whole operation of evaluation.

Ekstrom developed techniques for evaluating a total program of vocational agriculture which had application to adult farmer education.⁶³ From state supervisors and teacher trainers in 44 states he collected information dealing with procedures used in evaluation in a total program of vocational agriculture. Ekstrom then evaluated five departments in Iowa with the help of local people and later organized a plan for evaluation as a result of the information and data from the 44 states and the five departments. His plan for evaluation included six steps which were:

⁶³George Frederick Ekstrom, "The Organization of Techniques for Evaluating Programs of Vocational Education in Agriculture." Unpublished Doctor's Thesis, Library, The Ohio State University, Columbus, 1938, 188 pp.

(1) determine the objectives for the program, (2) survey to determine instructional needs, (3) set up specific objectives for the year, (4) keep accurate records of outcomes of activities, (5) obtain reaction of local people served and (6) appraise the results from activities.⁶⁴ He recommended that local people be used in carrying out the six steps. Through the use of surveys of local problems and the use of local committees of teachers, school administrators and class participants, Ekstrom carried out the six steps in the five communities.⁶⁵

Ekstrom stated that the greatest contribution of the study was to the local departments which participated in the planning and evaluation. He also noted that it was helpful to state departments of education and college teacher training programs in aiding teachers to evaluate local programs.⁶⁶

Four weaknesses of the study were listed. These were:⁶⁷

1. The lack of objectivity that is found in statistical studies.

⁶⁴Ibid., P. 158.

⁶⁵Ibid., P. 144.

⁶⁶Ibid., P. 155.

⁶⁷Ibid., P. 154.

2. The problem of the degree to which local objectives are defined.
3. Lack of instruments available for evaluation purposes necessitated the development and use of several blanks and forms to be used by local communities.
4. Variation in personnel of local communities caused differences in judgment of local factors.

Another weakness could be the lack of validity of the criteria which were submitted by state supervisors and teacher trainers in the 44 states for use in evaluation in local communities. Ekstrom raised an important question when he asked how to secure valid criteria on which to base objectives.

Also there was a lack of any stated criteria by which the effectiveness of the various devices used in evaluating the local departments could be judged. There is also a question of the definition of the meaning of "superior", "average", "poor" and "inferior" in the form used in the local evaluation.

Ekstrom made a contribution to the field of evaluation in adult education in vocational agriculture and certainly gave strength to the use of the informal type of evaluation.

Somewhat related to the study made by Ekstrom was one done by Parent.⁶⁸ He sent a questionnaire to 199 teachers and

⁶⁸ Weber Joseph Parent, "Certain Factors Influencing the Success of Evening School Work in Vocational Agriculture." Unpublished Master's Thesis, Library, Louisiana State University and Agricultural and Mechanical College, Baton Rouge, 1941, 62 pp.

later interviewed 80 of them. He attempted to relate 18 factors of success in evening schools to the one criterion of approved practices adopted.⁶⁹ He listed 12 factors of success as being significant, such as teacher's pay and the time classes are held.⁷⁰ This left five factors, such as agricultural experience of the teacher and size of enrollment in adult class, as not being significantly related to success.

The thesis was well written and the research done scientifically. One could question the use of only one criterion as the sole basis for judging the success in adult evening-school work. There might be other equally important and equally significant criteria for judging success in this field.

Cox attempted to make an evaluation of evening school instruction by reviewing literature suggested by all state supervisors and teacher trainers, and conducting a tentative program based on information obtained from literature and data provided by this group and information secured from conferences with

⁶⁹ Ibid., P. 4.

⁷⁰ Ibid., P. 55.

evening school instructors and professional agricultural workers.⁷¹ Forty-four instructors of agriculture in Virginia conducted adult-class programs reportedly based on the findings of Cox. These instructors were visited by state supervisors and teacher trainers in agricultural education. The information secured from the forty-four schools was compiled into ten jobs for instructors to do in conducting evening classes in Virginia. The tenth job was to determine the results of the evening class. This job was broken down into three parts which were making reports, summarizing and interpreting results, and informing the class and others on results. The procedure used and the information collected on each item were left to the evaluator.

Much of the authority for approval or disapproval of practices to use in evaluation rested largely with the state supervisors and teacher trainers in agriculture education. Other methods of securing practices might be made valid. The final step of validating suggested practices to be used in evaluation either was not done, or was not reported.

⁷¹ O. C. Cox, "Evening School Instruction In Vocational Agriculture." Unpublished Master's Thesis, Library, Virginia Polytechnic Institute, Blacksburg, 1931, 164 pp.

A report on a status study involving informal and statistical methods will conclude this review of studies dealing with evaluation in adult education in vocational agriculture.

Miller⁷² evaluated adult education activities in a county by studying records in the county agricultural extension and Farm Bureau Office, and the office of the county superintendent of schools. He sent questionnaires to 71 teachers in rural schools and visited all large and consolidated schools. He interviewed newspaper editors and sent questionnaires to 30 ministers, 124 officers and leaders in Farm Bureau groups and 203 members of rural school boards.⁷³

Miller provided a concluding statement on the job that each agency was doing and stated that all agencies as organized in the county were inadequate for reaching adults in the county.⁷⁴ The study was thorough and well done but it did not provide suggestions for the public school or any other group to use in making further evaluation of their programs or techniques to improve their present program.

⁷²A. S. B. Miller, "Adult Education Activities in Dallas County, Iowa." Unpublished Master's Thesis, Library, Iowa State College, Ames, 1937, 114 pp.

⁷³Ibid., P. 33.

⁷⁴Ibid., P. 100.

Another important agency for adult education is the university or college extension division. The Rochester Institute of Technology surveyed 914 out of a group of 2,849 first-term students during 1947-48.⁷⁵ The evaluation was done by a short-answer questionnaire which had a final question asking for comments. The questions sought answers from students of the reasons for taking courses, methods used to find out about courses, their opinions about staff and services, plant and facilities and their rating of forms and procedures. The evaluation was used to make adjustments in the program, even though 87 per cent of the students returning a questionnaire indicated that they intended to return to the institute for more courses. The research was apparently carefully done and provided administrators of the institute with a type of information they desired.

A recent study in the field of general adult education was completed by Kempfer. Although specific parts of the study are analyzed in Chapters III and IV, it should be pointed out in this chapter that he used both informal and statistical methods to

⁷⁵Burton E. Stratton and Laurence Lipsett, "An Extension Division Evaluates Its Program." Adult Education Bulletin, 13:240-244, December, 1948.

evaluate practices of identifying educational needs of adults.⁷⁶ Following the use of a panel or jury of leaders in the field of adult education to make a philosophical appraisal of nine criteria for a good program of adult education, Kempfer sent questionnaires to administrators of programs of adult education in the 48 states. He received 530 returns with some from each state. Through a statistical process he found six of the nine criteria to be valid. In addition, he determined the value of 37 practices of identifying the educational needs of adults based on the six criteria. The study was thorough, well done and made a contribution to the field of adult education.

In concluding this chapter on methods of evaluation, a report should be given on a procedure developed by the Cooperative Study of Secondary School Standards.⁷⁷ This method combined the formal and the informal approaches. Although developed for secondary schools the method had wide usage in related fields including adult education. It was a combination of the methods developed by Hemlin in the six schools in Illinois, and the

⁷⁶Homer Kempfer, Identifying Educational Needs of Adults. Federal Security Agency, Circular No. 330, Washington, D. C.: Government Printing Office, 1951, 64 pp.

⁷⁷Cooperative Study of Secondary School Standards, Evaluative Criteria. Menasha, Wisconsin: George Banta Publishing Company, 1950, 305 pp.

methods of National Standards Committee of the American Vocational Association. Evaluation of a high school through use of the materials and procedures developed by the Cooperative Study for Secondary School Standards required many months of self-study by the whole faculty, with students and community people involved. Following the study an "outside team", well acquainted with high schools, examined the data and visited the school for a constructively critical and stimulative evaluation. This procedure usually resulted in many more months of follow-up activity. While the evaluation was ostensibly made for accreditation the chief outcome was growth of faculty, administration, students and community people, which resulted in improvement of the school.

The agricultural section of the Evaluative Criteria published by The Cooperative Study of Secondary Education had six parts. In part IV, Direction of Learning, the fourth sub-part was devoted to evaluation.⁷⁸

Twelve methods of evaluation were listed, part of which apply to adult education in agriculture. The methods of evaluation listed in the Evaluative Criteria appeared there through a decision made by a committee.

⁷⁸Ibid., P. 69.

The evaluation procedure established by the Cooperative Study of Secondary School Standards apparently accomplished some of the purposes intended yet validation of the methods of evaluation was needed. The procedure showed evidence of the trend toward heavy involvement of local people in evaluation. The procedure also involved the use of predetermined criteria which allowed the local people little opportunity to come to grips with underlying factors that make for successful educational programs. The Cooperative Study for Secondary School Standards made a significant change in the older concept of "University Accreditation" by removing to some extent the practice of university representatives making an inspection of the school personnel, plant and educational program, which provided a rather subjective evaluation of the school.

Summary and Conclusions of Studies Reviewed

There appears to be a trend away from the "standards" concept of evaluation. This concept involves the establishment of state or national standards which anyone could apply to a local community and determine the quality of adult education in vocational agriculture. Hamlin has provided the greatest impetus in agricultural education for self evaluation. His broad concept

of self evaluation includes the use of people largely from the local community to determine criteria on which objectives for a program are to be based and to carry out most of the evaluation procedure. He admitted that he did not have all the answers for problems or questions concerning evaluation. He suggested that the local community needs some help from people outside in making an adequate evaluation. The National Committee on Standards, established by the Agricultural Section of the American Vocational Association, believed in the "standards" concept but did mellow in its philosophy regarding the use of "standards". The early emphasis by this committee was that the "expert" from outside the community was best equipped to do evaluation. The bulletin published by the United States Office of Education which contained the results of the work of the committee has had much circulation. The Cooperative Study for Secondary School Standards used an operating pattern which included both the team of experts from outside the community and local people in evaluation of the local school program of education. Certainly the work of National Committee on Standards, the work by Hamlin and the work of Cooperative Study of Secondary Standards have emphasized the need for better evaluation.

There seems to be little agreement on what the criteria should be on which evaluation and objectives are based. There is even less agreement on the method for determining the criteria. Through the use of philosophical approach, work by local, state and national committees and statistical analyses, patterns of practices to use in evaluation have evolved. Adequate proof for these patterns of practices remains to be made.

CHAPTER III

PLANNING AND CONDUCTING THE STUDY

Following the review of literature in evaluation in adult education, a research plan was developed which would provide the information needed to analyze the practices used in evaluating local programs of adult education in vocational agriculture.

General Method of the Study

The first step of the study consisted of philosophically establishing criteria and criterion measures for superior programs of adult education in vocational agriculture. After the philosophical basis for the criteria was established, the measures were revised as needed and 30 evaluation practices were selected. The criterion measures and the evaluation practices were constructed into a questionnaire, copies of which were mailed to a random sample group of teachers of vocational agriculture in nine north-central states. The scores on the measures for each criterion were correlated with the scores of all other criteria. This provided a mathematical validation to compare with the earlier philosophical validation. Criteria that did not measure up to predetermined levels of significance were rejected in both methods.

The relation was established between each of the 30 evaluation practices and each of the valid criteria. The mean scores from the item analysis of each practice was combined for each criterion. This provided a composite score of the value of each practice. Evaluation practices were then rated according to value.

Validating the Statements of Criteria

A review of literature on adult education produced suitable measures and information needed to state ten criteria for a good program of adult education in vocational agriculture. The statements for each criterion and assumption were constructed from the information presented in the fourth section of this chapter entitled, Developing the Criteria and Constructing the Questionnaire. Of special help in formulating the criteria and assumptions was a study by Kempfer.¹ The ten criteria and assumptions, which were prepared for the jury used in this study, were sent to the judges in the following form.

Criteria for a Good Program of Adult Education in Vocational Agriculture.

I. RELATIVE SIZE OF PROGRAM

¹ Homer Kempfer, Identifying Educational Needs of Adults. Circular No. 330, Federal Security Agency, Washington, D. C.: Government Printing Office, 1951, 64 pp.

Over a period of time, an increasing number of farm people in the community become involved in educational activity.

Assumption: Adequate evaluation should be based on more than measures of size. The kind and quality of activity when considered with size forms a more satisfactory basis for evaluation. In most cases, however, a program will be of more value if more people are reached. The relative number of farm people participating in a program of agricultural adult education will be high if the program is good and meets the educational needs and interests recognized by the people.

II. CLIENTELE SERVED

People from varied segments of the rural population participate in the program.

Assumption: Vocational education in agriculture is needed by people who are farming and who desire to improve their farming ability, people who desire a change from their present occupation to agriculture, people who own farms but do not live on their farms, and people in related agricultural occupations. Agricultural education should be provided for those who need it regardless of age, sex, intelligence, and socio-economic status.

III. FLEXIBILITY

Activities in adult education in vocational agriculture are conducted during different and appropriate times of the day, week and year. Courses vary in length and are conducted at different and appropriate locations.

Assumption: Educational needs of people in a single community are varied. To adequately meet these needs, activities with different purposes may require different term and session length, and different daily, weekly and seasonal scheduling.

IV. RESULTS

Adult education in vocational agriculture results in improved community life.

Assumption: Effective instruction in vocational agriculture has tangible results. Instruction carried to the doing level produces recognizable changes in people. These changes in farm people show measurable results in the farming program, family and community life.

V. METHODS

A variety of methods and approaches are used to provide learning opportunities for adult farmers.

Assumption: Adults vary in their educational background, native intelligence, occupational competence and their desire to learn. It is necessary, therefore, to provide a variety of methods of instruction to meet the varied needs and interests of farm people.

VI. COORDINATION

The activities involved in conducting adult education in vocational agriculture are satisfactorily coordinated.

Assumption: Coordination of the program of adult education in vocational agriculture with all other educational programs in the school and in the community is necessary for efficient operation. A close working relationship among the individuals of the school and community who are responsible for adult education programs will promote an effective program of adult education in vocational agriculture.

VII. COOPERATION

The program of adult education in vocational agriculture includes activities which involve cooperation with other agricultural and educational groups and agencies.

Assumption: Communities have many human and institutional resources available to aid in solving the problems of the people. More suitable solutions to problems are found when more resources are used. Cooperation is the method by which available resources are used to meet the educational needs and to solve the problems of farm people.

VIII. ACTIVITIES MATERIALIZING

A high percentage of planned and announced activities materialize.

Assumption: Activities will materialize if they are based on educational needs and interests of farm people and if the activities are adequately planned, announced and executed.

IX. MAINTENANCE OF ACTIVITY

A high percentage of planned activities is maintained throughout the period planned.

Assumption: If group activities are properly conducted and are based on the educational needs and interests recognized by farm people, group interest will remain high enough to warrant the maintenance of the activity throughout the period planned.

X. PERCENTAGE OF ATTENDANCE

A high percentage of attendance is maintained in activities in which farm people enroll.

Assumption: If activities are based on the educational needs and interests recognized by farm people, they will regularly attend these activities.

With the aid of H. M. Byram, a group of 20 men who were leaders in agricultural and general adult education were selected to judge the criteria for validity. The list of judges appears in appendix A. These men were asked by letter if they would judge the criteria. All replied that they would act as judges. The criteria and assumptions as reproduced above, a score sheet and a cover letter were sent to the judges. All judges responded. The tallies of their votes are shown in Table V. Copies of the request to judge, acceptance card, cover letters and the score sheet are shown in appendices B, C, D and E. All 20 judges appeared to be willing to perform the function of judging. It will be noted that all ten criteria were decidedly valid in terms of the opinions of the judges.

There was sufficient evidence at this point to include the criteria with accompanying measures in the questionnaire.

Many of the judges wrote comments which qualified their vote. Some of these comments stated that the meaning of the cri-

TABLE V
VOTES OF 20 JUDGES ON TEN CRITERIA AND THE ACCOMPANYING
TEN ASSUMPTIONS

Criterion	Number of judges		
	Agreeing	Disagreeing	Writing Comments
I. Relative size of program	20	0	5
II. Clientele served	19	1	8
III. Flexibility	19	1	7
IV. Results	20	0	9
V. Methods	20	0	6
VI. Coordination	17	3	8
VII. Cooperation	20	0	6
VIII. Activities mater- ializing	18	1*	7
IX. Maintenance of activity	17	2*	7
X. Percentage of at- tendance	20	0	2
Mean	19	.8	6.5
Number of judges agreeing to all criteria:			14

*One judge provided no vote for criteria VIII and IX.

terion and possible measures was not fully understood while others gave specific suggestions which were used in the questionnaire. The measures for the criteria were revised as necessary following the vote of the judges. It is understandable that the completed questionnaire would be more specific than the statements of criteria and assumptions.

Samples of the comments of the judges are reproduced at this point to provide insight for the reader on the type of thinking done by those judges who wrote comments and to show why certain items were included in the measures of criteria. The mean number of comments made about each criterion was six and one-half.

In the opinion of the investigator the comments of the judges did not warrant a change in the criterion, "relative size of program". The comments were as follows:

"Size measured by numbers of attendance at 10 class meetings is inadequate. I interpret the phrase "relative number of farm people" to include the farmer who may be regularly enrolled for three years, then for various circumstances may not register this year but comes twice for conferences and you make visits to his farm."

"I have reservations on this point and agree with it only as a general factor. Our past experience in _____ which attracted 300 persons annually in 10 meetings - over-grown extension type meeting - lead to caution on this point."

"The teacher load is a determining factor. A teacher can work with a few people and do intensive work or reach many more people and cover a limited number of practices on one enterprise."

"There is a likely saturation point."

"Numbers are people - therefore important. However my emphasis would be on "over a period of time". At first numbers are of less importance."

Among the judges who wrote comments there was a division of opinion on the clientele to be served. Judges favoring limiting the clientele to bona fide farmers stated that:

"When we have adequately served the farmer then we can begin to think about related occupations and absentee owners."

"Since vocational agriculture is designed to meet the needs of those who are farming and those who are preparing to farm, there is a question as to how much time should be devoted to those who are engaged in occupations related to farming."

"If the practical problem of time arises, top priority should go to those now earning their living from farming."

Judges providing statements favoring a broad approach to clientele served stated that:

". . . providing those in other occupations have an immediate need for training and will soon use it in farming."

"Include city-employed who live on farms or in rural areas."

". . . add part-time farmers. They are increasing in importance as a factor in adult education."

It was decided to use a reasonably broad approach to measuring clientele served.

All seven judges commenting on the criterion of "flexibility" agreed that the program should be flexible. Typical of the remarks were two statements:

"I would hold for programs that are long enough in terms of number of meetings and in terms of length of course so that there could be no question that "systematic instruction" is being offered."

"Yes. Minimums in the policy statements have too often been standards."

The preceding comments provided part of the basis for devising the five parts and 22 items included in the measures of the criterion on "flexibility".

The comments on the criterion of "results" included two statements of this nature:

"Yes - if a thing exists it exists in some amount . . . and can be measured if we are ingenious enough."

"Also results often more important which can't be measured but which can be estimated."

Two judges thought this way:

"Yes - talking about it is not much education."

"Change second sentence to doing level."

One judge stated that:

"There are other results - improved occupational efficiency and improved family living."

In so far as possible all of the above ideas were included in the measures of the criterion on "results."

Two judges responding with comments on "methods" emphasized learner participation in this fashion:

"Would you say that participation on the part of the learners is an essential phase of any instructional method in adult education?"

"It usually takes more preparation by the teacher to do effective teaching on the farm or other place where a teaching situation actually exists . . ."

Two other judges suggested that:

"Variety alone is not sufficient. The method and approaches selected were used to meet specific needs."

"But this does not mean that all methods are equally good or that there are generalized principles."

One judge asked for more clarification of "methods."

These opinions displayed a concern for methods that produced results. Methods used just to be doing something were not looked upon with favor by the judges who wrote comments.

Comments on "coordination" included three responses favoring more coordination. Typical was this statement:

"I agree with the assumption that coordination is necessary but that it is not always achieved. One reason is that all persons do not know about or follow the memoranda of understanding between the various agencies."

Of the three judges voting against this criterion, which had the highest negative vote of any criterion, two felt that coordination of adult education was unnecessary in a rural high school and the other judge from a philosophical viewpoint commented:

"Object to the term "coordination". This usually means that someone does the coordinating."

Both types of negative reactions to the criterion of "coordination" may be valid but the criterion and accompanying measures were put in the questionnaire.

"Cooperation" was the fourth criterion to receive no negative

votes by the judges. The six judges making comments on this criterion all had favorable comments. One such comment was:

"The assumption is sound."

Two judges qualified their remarks by saying:

". . . some teachers seem to stay so busy cooperating that no time is left for such things as adult or young farmer classes."

". . . It is well to cooperate with others when you expect them to give assistance to you . . ."

The statements by the judges indicated that the criterion and assumptions were favorable to them.

Comments by judges on the criterion of "activities materializing" seemed to center on the matter of understanding the statement of the criterion and the accompanying assumption. A short comment by one judge is an example of their thinking:

"This isn't quite clear to me. If an activity is existent, doesn't it materialize?"

In a different vein one judge indicated that:

"I have a sneaking feeling that it was good for something to fail from the standpoint that it indicated that the program was stretching out a little ahead of routine and that they were bound to have some casualties but you specifically state "a high percentage" which does not mean perfection."

The objection to the criterion was cleared up to a great extent when the measures were devised.

Somewhat similar treatment was given the criterion of "maintenance of activity." Two men felt that this criterion should be incorporated with the previous criterion, "activities materializing." One felt that the item was covered in the criterion, "flexibility." Two stated that it wasn't clear. One man suggested that:

"Why not beyond the period of instruction planned?"

This idea was incorporated in the measures. An attempt at clarity was made in establishing the measures for the criterion.

The fifth and last criterion to receive no negative votes was the one dealing with percentage of attendance. One of the positive comments was:

"My experience over a period of years leads me to give full agreement to this assumption."

A simple method was devised to measure this criterion.

One judge added a criterion entitled "Evaluation of Program." He stated that he would have preferred some statement indicating that activities were planned, done and evaluated in terms of the basic objectives of the group concerned. This point of view is wholly justifiable and the idea presented was included in the list of practices to be used in evaluation.

Three judges wrote favorable general comments at the close of the criteria score sheet. These were:

" . . . I like your use of assumptions. Although evaluation is involved in several, it may need a heading."

"I think you have done a very fine job in setting up the criteria for a good program of adult education in vocational agriculture. I like the style and the concise manner in which you state the underlying phrases (assumptions). I have been trying to disagree with each point, but I can't. The only point I can raise is the breadth of the program. Should it be broad enough to serve all groups in the rural community and should it have depth enough to supply all additional needs of people. Now I know that you specifically say "in vocational agriculture" so that probably eliminates that criticism."

"I can find no fault with this document. I like its brevity and clarity. I think the ten major points make a very complete statement."

The measures for the ten criteria were developed from the information provided by the votes and comments of the judges and from the ideas secured from workers in the field of adult education.

Developing the Criteria and Constructing the Questionnaire

Developing the Criteria. The information needed to state each criterion and assumption and to provide suitable measures for each criterion was drawn from literature on adult education. The comments made by judges were used in refining the criterion measures.

The first criterion, "relative size of program", was based in part on a statement by Kempfer which read:²

²Ibid., P. 2.

"A good program has a comparatively large fraction of adults in the community involved in educational activities."

Since instruction in adult education in vocational agriculture is systematic and emphasis is placed upon working with the same group of farmers in organized instruction throughout the year and to some extent with the same group from year to year, it seemed desirable to obtain a measure of relative size of program that would include the hours of instruction received per class member as well as to consider the number of farmers enrolled. A formula developed and tried by Kempfer was selected and used to determine "relative size of program". The formula was:³

$$\frac{\text{Total clock-hours attendance per year}}{\text{Adults in the community}} = \text{clock-hour index}$$

It appeared that the above formula would provide an adequate measure of relative size for both large and small communities in relation to total need.

To obtain the information needed for this study, respondents were asked to state total clock-hours attendance for adult-farmer activities and to give the number of farms in the community.

³Homer Kempfer, "A Formula for Measuring Adult-Education Programs." Adult Education Bulletin, 12: 195, October, 1948.

Hamlin was of considerable help in suggesting the following groups to be considered in the criterion, "clientele to be served."⁴

1. Young-adult farmers (age 25-35)
2. Middle-aged adult farmers (age 35-55)
3. Farmers nearing retirement (age 55 up to retirement)
4. Retired farmers
5. Tenant farmers
6. Part-time farmers
7. Farm leaders

Other groups suggested by Hamlin were:⁵

1. City or village business men in related occupations
2. Farm owners not farming
3. Farm women
4. Native farm laborers
5. Foreign-born farm laborers

Other groups in many rural communities that have need for agricultural education include:

1. Non-farming rural population

⁴Herbert M. Hamlin, "Agriculture Education in Community Schools" Danville: The Interstate Publishing Company, 1950, P. 311-314.

⁵Ibid., P. 126.

2. Workers in related agricultural occupations
3. Illiterates engaged in farming
4. Illiterates engaged in related agricultural occupations

The sixteen clientele groups were included as measures for the criterion, "rural clientele served".

The measures for the criterion, "flexibility", were drawn from Phipps and Cook⁶ and from the suggestions of the judges of the criteria. The items for flexibility of program were put in the following form:

A. Class activities were conducted during:

- | | |
|-------------------------|--------------------------------------|
| 1. Morning hours only | 4. Morning and afternoon |
| 2. Afternoon hours only | 5. Afternoon and evening |
| 3. Evening hours only | 6. Morning, afternoon
and evening |

B. Activities were conducted:

- | | |
|--------------------|-----------------------------|
| 7. 1 day per week | 9. 3 or 4 days per week |
| 8. 2 days per week | 10. 5 or more days per week |

C. Activities were conducted in:

- | | |
|-----------------|-------------------------|
| 11. 1 location | 13. 3 to 5 locations |
| 12. 2 locations | 14. 6 or more locations |

⁶Lloyd J. Phipps and Glen C. Cook, Handbook on Teaching Vocational Agriculture. Danville, Illinois: The Interstate Publishing Company, 1952, P. 530-534.

D. Activities were scheduled during:

- | | |
|----------------------------|-----------------------|
| 15. 1 quarter of the year | 17. 3 quarters of the |
| 16. 2 quarters of the year | year |
| | 18. 4 quarters of the |
| | year |

E. Continuous activities were scheduled for:

- | | |
|----------------------------|-----------------------|
| 19. 1 quarter of the year | 21. 3 quarters of the |
| or less | year |
| 20. 2 quarters of the year | 22. 4 quarters of the |
| | year |

F. Activities were scheduled for a series of:

- | | |
|--------------------------|-------------------------|
| 23. 10 meetings per year | 25. 21-30 meetings |
| 24. 11 - 20 meetings per | per year |
| year | 26. 31 or more meetings |
| | per year |

Both qualitative and quantitative measures were secured for the criterion of "results" since emphasis was placed on these two aspects of results in the research cited in Chapter II. Diggins, Wall and Ayers, as reported in the review of literature, evaluated programs of adult education in terms of approved practices adopted by farmers. Using the work of these three men and the suggestions of many others, the following measure for approved practices was developed:

Give the average number of approved practices put into use per farmer in the program in:

- | | |
|--------------------------------|-----------------------|
| 1. Farm Management | 5. Crop farming |
| 2. Marketing | 6. Improved living on |
| 3. Soil and Water Conservation | the farm |
| 4. Livestock farming | 7. Farm mechanics |

Among many who stressed the importance of cooperation and cooperatives as a measure of results in agricultural education were Deyoe⁷ and Hamlin.⁸ As a result of this emphasis the following two items were included as measures of results:

1. Give the number of cooperative buying and selling activities organized as a result of instruction in adult education in vocational agriculture.
2. Give the number of cooperative organizations formed as a result of instruction in adult education in vocational agriculture.

Phipps and Cook placed emphasis on the use of special teachers as an indicator of the extent to which the educational

⁷George P. Deyoe, "Evaluating Outcomes of Supervised Farming Programs." The Agricultural Education Magazine, 14:146, February, 1942.

⁸Herbert M. Hamlin, "Summary of Measurement Studies in Agriculture Education." The Agricultural Education Magazine, 6:93, December, 1933.

program reached neighborhoods and individual farmers.⁹ The use of special teachers is also a measure of leadership development since the special teachers develop and use teaching ability. This point is clearly stated by Ekstrom and McClelland.¹⁰ The criterion measure for the use of special teachers was formulated as follows:

Give the number of farmers used as special teachers of adult classes.

Another measure of results of adult education is the degree of leadership developed by participants. This point was emphasized in the periodical Adult Leadership.¹¹ The following measures of leadership development were used in the questionnaire:

1. Give the number of farm organizations formed as a result of instruction in adult education in vocational agriculture.
2. Give the number of farmers who helped to plan the instructional program in adult education in vocational agriculture.

⁹ Phipps and Cook, Op. Cit., P. 531.

¹⁰ George F. Ekstrom and John B. McClelland, Adult Education in Vocational Agriculture. Danville, Illinois: The Interstate Publishing Company, 1952, P. 32.

¹¹ "What is Leadership". Adult Leadership, 1:2, P. 7, June, 1952.

3. Give the number of other leadership activities assumed by class members.

Much emphasis has been placed on community betterment as a product of adult education. Among many to stress this aspect of adult education was Young.¹² The following measure was therefore included:

Give the number of community betterment projects which have been completed.

Other outgrowths of instruction which are indicators of results were listed by Hall,¹³ Hamlin¹⁴ and Gregory.¹⁵ Their suggestions were included in the final item on measures of the criterion "results".

- | | |
|-------------------------|-------------------------------|
| 1. Dependability | 5. Public Problems |
| 2. Scientific attitudes | 6. Interest in farming |
| 3. Fair play | 7. Ability in self expression |
| 4. Broadmindedness | 8. Literacy |

¹²O. L. Young, "Conducting Young Farmer and Adult Farmer Classes Yields Dividends." The Agricultural Education Magazine, 12:153, February, 1940.

¹³D. M. Hall, "Evaluating Educational Programs." The Agricultural Education Magazine, 15:147, February, 1943.

¹⁴Herbert M. Hamlin, "Educating Farm People for Their Part in National and World Affairs." The Agricultural Education Magazine, 20:8, July, 1947.

¹⁵R. W. Gregory, "Progressive Agricultural Education." The Agricultural Education Magazine, 13:3, July, 1940.

- 9. Home and family living
- 10. Housing
- 11. Recreation
- 12. Sense of group unity
- 13. Activities in the community
- 14. Understanding basic principles of farming

Ekstrom and McClelland provided the first four items for the measures of the criterion, "methods."¹⁶

- 1. Courses were offered as a part of a series on one general subject.
- 2. Courses were offered as a separate unit.
- 3. Field trips were conducted.
- 4. Certificates and diplomas were given.

Methods drawn from the field of general adult education and suggested by Kempfer were:¹⁷

- 1. Radio broadcasts were given in content fields by agricultural instructor.
- 2. Radio-listening discussion groups were held.
- 3. Television-viewing discussion groups were held.

¹⁶ Ekstrom and McClelland, Op. Cit., P. 52, 59-61, 88.

¹⁷ Homer Kempfer, Identifying Educational Needs of Adults. Office of Education, Circular No. 330, Federal Security Agency, Washington, D. C.: Government Printing Office, 1951, P. 15.

4. Workshop, short institutes or conferences were used.
5. Courses were offered in cooperation with industrial, business and civic organizations.
6. School-sponsored clubs were organized for adults.
7. Guidance services were provided for adults.

Phipps and Cook have given support to the use of teaching personnel in addition to the agricultural instructor.¹⁸ This formed the basis for the following measure:

Classes were taught by:

- | | |
|--|---|
| a. Agricultural instructor | c. Farmers |
| b. Worker in allied agricultural occupations | d. Extension specialist under supervision of agricultural teacher |

For the concluding items which measured methods Knowles,¹⁹ and Ekstrom and McClelland²⁰ provided the following:

As a part of systematic instruction the following methods were used:

- | | |
|----------|------------|
| a. Forum | b. Lecture |
|----------|------------|

¹⁸ Phipps and Cook, Op. Cit., P. 524, 529.

¹⁹ Malcolm S. Knowles, Informal Adult Education. New York: Association Press, 1950, P. 43-44.

²⁰ Ekstrom and McClelland, Op. Cit., P. 81, 89.

- | | |
|--------------|---------------------|
| c. Debate | f. Group discussion |
| d. Symposium | g. Demonstration |
| e. Panel | h. Reports |

The measures for the criterion of "coordination" were drawn from three sources and placed under the heading which precedes them. In the following measures number (1) was taken from Ekstrom and McClelland,²¹ number (2) through (6) from Knowles²² and the last two, (7) and (8) from Phipps and Cook.²³

What methods were used to coordinate the programs of adult education in vocational agriculture?

1. Advisory council for the whole agriculture program
2. Informal group meetings with leaders
3. Informal meetings with individuals
4. A director (or coordinator) engaged by the public school
5. Examination of published literature of other agencies
6. Agreements defining the field of educational activity between the schools and other agricultural agencies
7. A school policy defining the fields of educational

²¹Ekstrom and McClelland, Op. Cit., P. 43.

²²Knowles, Op. Cit., P. 17.

²³Phipps and Cook, Op. Cit., P. 522.

activity of adult, young farmers and high school vocational agriculture and institutional-on-farm training.

8. Integration with total school adult program

The measures for the "cooperation" in the program of adult education in vocational agriculture were constructed from ideas presented by two men, Hamlin and Kempfer. From Hamlin came:²⁴

1. Cooperate with other agricultural agencies (other than public school) in planning and carrying out community-wide educational projects in agriculture such as grass day, farm-face-lifting, hay-making demonstration and soil conservation.
2. Cooperate with educational and community groups in support of other worthwhile community projects, such as park improvement and clean-up campaign.
3. Cooperate with the institutional-on-farm-training teacher in the school in planning and carrying out agricultural education programs.
4. Cooperate with the teacher of the young-farmer group in the school in planning and carrying out programs of adult education.

²⁴ Herbert M. Hamlin, Agricultural Education in Community Schools. Danville, Illinois: The Interstate Publishing Company, 1950, P. 34, 138-143.

5. Cooperate with the shop teacher(s) in use of shop facilities.
6. Cooperate with all persons responsible for or involved in the total program of adult education in the public school in planning and carrying out educational activities in the school.
7. Cooperate with all persons responsible for or involved in the total school program in developing educational activities within the school and community.

Kempfer provided the suggestions which formed the balance of the measures for "cooperation."²⁵

1. Cooperate with other adult education agencies in the publication of an adult education directory with a listing and/or description of educational activities of each agency.
2. Interchange with non-school personnel as resource persons.
3. Make available the agricultural library to the rural community groups.

²⁵ Kempfer, Op. Cit., P. 19.

4. Inter-loan with non-school groups such specialized equipment as cement mixers, movie and slide projectors and other similar items.

The following measures for the criterion, "activities materializing," were drawn from Kempfer:²⁶

1. How many courses were planned?
2. How many field trips and other activities were planned?
3. Of the courses and activities listed in questions (1) and (2), above, how many actually started?

Criterion measures used by Kempfer²⁷ and a suggestion made by one of the judges of the criteria provided foundation for the following measures for the criterion, "maintenance of activity."

1. Of the number of courses and activities listed in question 3 of the previous section, how many were carried to completion?
2. Of the number of courses and activities listed in question 3 of the previous section, how many were combined because of declining attendance?

²⁶Kempfer, Op. Cit., P. 20.

²⁷Kempfer, Op. Cit., P. 21.

3. Of the number of courses and activities listed in the last question of the previous section, how many held meetings in addition to those planned?

Ekstrom and McClelland pointed out that consistency of attendance is evidence of strong support for a program of adult education.²⁸ Kempfer added to the importance of keeping good attendance by saying:²⁹

"In a good program of adult education a high percentage of attendance is maintained in activities which start."

The measure used to determine the "percentage of attendance" was a simple mathematical calculation. The total average session attendance for all groups and classes was divided by the total enrollment in the program.

Evaluation Practices. The second section of the questionnaire, which contained the practices used in evaluation in local communities, was constructed by selecting practices that had been recommended and/or used in evaluation in adult education.

The first three practices have been widely recommended in

²⁸ Ekstrom and McClelland, Op. Cit., P. 50.

²⁹ Kempfer, Op. Cit., P. 3.

all types of education. One authority in the field of general education, Tyler,³⁰ plus Hamlin³¹ and Deyoe³² in agricultural education, highly recommended these practices which were:

1. Clearly stated objectives are used to form the basis for evaluation.
2. A list is made of the kind of evidence needed to indicate that objectives are being met.
3. A list is made of the methods and devices to use in collecting evidence which will reveal that objectives are being met.

The practice of evaluating instruction by analyzing the approved practice lists checked by class members is the most widely recommended evaluation practice to be found in adult education in vocational agriculture. In addition to studies reported in the review of literature which recommend this practice, Phipps and Cook put high value on this practice.³³ An evaluation practice less

³⁰Ralph W. Tyler, "General Statement on Evaluation. Journal of Educational Research, 35:498, March, 1942.

³¹Herbert M. Hamlin, "Students Can Share." The Agricultural Education Magazine, 23:111, November, 1950.

³²George P. Deyoe, Supervised Farming. Danville, Illinois: The Interstate Publishing Company, 1943, P. 89-90.

³³Phipps and Cook, Op. Cit., P. 669-670.

widely used yet highly recommended by the same authors is the use of production records of class members to indicate effectiveness of instruction.³⁴ Phipps and Cook also recommend that part of the last meeting of the course be used for evaluation.³⁵

Schroeder studied enrollment and attendance records to determine what people were participating in adult education and the degree of their participation.³⁶

Hamlin has consistently put a high value on the development of local leadership and the development of attitude change by involvement of local people in programs of adult education. This was noted especially in an article written in 1948.³⁷

Along with others, Guiler recommended and used the practice of determining the degree of cooperation evidenced through instruction.³⁸ The same author made a systematic study of the community to discover changes due to instruction.

³⁴Phipps and Cook, Op. Cit., P. 669.

³⁵Phipps and Cook, Op. Cit., P. 615.

³⁶Walter P. Schroeder, "A Case Study of the Development and Evaluation of a Program of Agricultural Improvement by Adults in the Olivet, Michigan Community." Unpublished Master's Thesis, Library, Michigan State College, East Lansing, 1947, P. 111.

³⁷Herbert M. Hamlin, "What Next in Evaluation." The Agricultural Education Magazine, 20:235, June, 1948.

³⁸Gilbert S. Guiler, "An Evaluation of the Adult Education in Vocational Agriculture in Canal Winchester, Ohio." M. A. Thesis, Library, The Ohio State University, Columbus, 1951, 126 pp.

A study being made in 13 north central states to determine new and innovating practices in conducting programs of adult farmer education listed 15 practices in evaluation.³⁹

All of these practices were used in the questionnaire and are as follows:

1. "Use advisory committees to evaluate the program.
2. Use business men to evaluate the program.
3. Use other agricultural education agencies to evaluate the program.
4. Use check list of approved practices planned and adopted.
5. Use production records of class members.
6. Use farm visits by the instructor.
7. Use time at the last meeting of the course for the evaluation of the course.
8. Use on-farm meetings during the summer for evaluation.
9. Conduct tour of farms of class members to observe practice.
10. Measure growth or decline in attendance.
11. Study enrollment to determine whom the program serves.
12. Study regularity of attendance of class members.
13. Compare (systematically) results of class members with standards, averages, etc.
14. Compare (systematically) results of class members with non-class members.
15. Study (systematically) change in attitude of class members and the community."

The practice of using other teachers in the school, administrators, school board members, state supervisory staff and

³⁹ Harold M. Byram, Chairman, Regional Study for Adult Education in Vocational Agriculture. Adult Education Research Committee for the North Central States of Teacher Education in Vocational Agriculture, Department of Agricultural Education, Michigan State College, East Lansing, Schedule B, P. 3-4.

college or university education staff to help evaluate the program has received acceptance in vocational and general education. This technique has been refined and reported carefully by the Cooperative Study of Secondary School Standards.⁴⁰ This practice is related to the one recommended and used by Hamlin in his study of program planning and evaluation in the six schools. The practice has been used in various ways in adult education in vocational agriculture. Its use still places emphasis on local people doing evaluation.

Three evaluation practices used in the Evaluative Criteria put out by the Cooperative Study of Secondary School Standards that have implication for adult education in agriculture are:⁴¹

1. Students participate in the evaluation of their own achievement.
2. Local agricultural leaders cooperate in the evaluation of vocational agriculture.
3. Results of evaluation are made the basis for planning further instruction.

⁴⁰ Cooperative Study of Secondary School Standards, Evaluative Criteria. Menasha, Wisconsin: George Banta Publishing Company, 1950, 305 pp.

⁴¹ Ibid., P. 69.

This review completes the list of evaluation practices and the sources used in locating the evaluation practices which were included in the questionnaire.

Arranging the practices. When the 30 practices were compiled they were arranged in no special order except that the first 24 were those that the teacher and/or a small group of participants could do. The last six practices were those involving larger committee operation and/or the use of people outside the community.

Trying out the questionnaire. Copies of the questionnaire were reproduced by using a spirit duplicator. Ten regular teachers of vocational agriculture who had taught adult classes during the 1951-52 school year in Michigan, filled out the questionnaire for the purpose of locating flaws in construction. In general, all items and instructions were clearly understood. However, as a result of the trial performance changes were made in the explanation for calculating the clock-hour index, items were clarified in the measurement of results, and three items were added for the measurement of methods. No changes were found to be necessary in the second part of the questionnaire which listed the practices used in evaluation.

As the duplicated questionnaire contained eight pages and appeared bulky it was decided to print the instrument. The printed form occupied four pages. A copy of the questionnaire is shown in Appendix F.

Selecting States and Local Departments for Study

Original plans called for making the study only with Michigan teachers of vocational agriculture. It was later decided to study a sample of programs in 13 north central states which comprise the North Central Region for agricultural education.

As a study of all phases of adult-farmer education was being made by the adult education research committee for the North Central Region, it was possible to use the lists of schools with the names and addresses of the teachers secured by this committee. The research committee was sending questionnaires to half the schools in each state. This enabled the investigator to sample approximately half the remaining schools in each state. It was deemed unwise to send two comprehensive questionnaires on similar topics to the same teachers in the same year. There were two exceptions to this decision. The states of Kansas, Nebraska, North and South Dakota were omitted from this study because either the number of schools offering adult classes was too small or no

adult-farmer classes were offered. The North Central Region Committee surveyed all the schools in which classes were offered in the above four states. The second exception was that all of the schools offering adult classes in Michigan were surveyed in this study. Only schools were included in the study in which adult-education classes were conducted during the 1951-52 year.

Chief state supervisors in agricultural education were asked by letter if it was satisfactory to survey the schools in the nine states, since these men submitted the lists of names of schools from which the sample was drawn.

Collecting the Data

The questionnaires, together with a cover letter and a stamped return envelope, were mailed to the selected teachers over a period of a month. (See Appendices F and G.) An accurate list was kept of teachers who responded. At the end of the second week following the mailing of the questionnaire the first follow-up card was sent. If no return was received at the end of ten days a second and slightly different follow-up card was sent. (See Appendices H and I.) Through this method a 71.7 per cent return was secured. A variation of this method was used in Michigan. Approximately 60 per cent of the teachers to receive questionnaires

were contacted personally by the investigator during the annual summer conference for teachers of vocational agriculture. Ten of these teachers completed the questionnaire and returned it during the conference. Those not contacted received the questionnaire by mail. This group, plus those who took the questionnaire home, received the same type follow-up card as did teachers in other states. Table VI shows more detail on the size of the sample and the percentage of questionnaires returned. The percentage of return varied from 59.7 per cent in Illinois to 96.7 per cent in Michigan. The factor of personal contact no doubt had a bearing on the higher return from Michigan men even though Michigan had the largest size of sample.

The questionnaires were filed by states and coded after all returns were in. Each part of each questionnaire was scored by a predetermined method which will be explained in the next chapter. All scores were transferred to International Business Machine Cards which provided a simpler means for analysis than hand tabulation.

The analysis of the criteria is provided in Chapter IV and the analysis of the evaluation practices is given in Chapter V.

TABLE VI

NAMES OF STATES SAMPLED AND PERCENTAGE OF QUESTIONNAIRES RETURNED

State	Number of departments with adult classes, 1951-52	Questionnaires sent	Questionnaires returned	Per- centage returned
Illinois	245	77	46	59.7
Indiana	52	17	14	82.4
Iowa	185	60	38	63.3
Kentucky	218	65	39	60.0
Michigan	92	92	89	96.7
Minnesota	124	39	30	76.9
Missouri	219	51	34	66.7
Ohio	107	37	27	73.0
Wisconsin	208	67	45	67.2
Total	1450	505	362	—
Percentage returned of total sent				71.7
Number of usable returned questionnaires				352

CHAPTER IV

ANALYSIS OF THE CRITERIA

Two methods of analysis of the criteria were used. The philosophical analysis was described in Chapter III. This chapter will deal with the statistical analysis.

Scoring The Criteria

Returns for each of the ten criteria were scored by using predetermined methods which will be described for each criterion. Appendix F shows the exact questions asked each respondent.

Relative size of program. The formula for the clock-hour index which was used to score this criterion is as follows:¹

$$\frac{\text{total clock hours attendance per year}}{\text{adults in the community}} = \text{clock-hour index}$$

The use of the formula was qualified to include only adult farmers. By referring to Appendix F the reader will see that respondents were asked to give the total clock-hours attendance

¹ Homer Kempfer, "A Formula for Measuring Adult-Education Programs." Adult Education Bulletin, 12:195, October, 1948.

for adult education activities and the number of farmers in the community. The total clock-hours attendance was divided by the number of farmers in the community which gave the clock-hour index.

Rural clientele served. This criterion was scored by giving one point for each group checked and adding all points.

Flexibility. The scoring of this criterion was slightly involved because a score was given each item in each section. Table VII indicates the weight assigned each item.

The scores for each item were arbitrarily assigned to provide a basis for giving more weight to the more comprehensive activities. The total score was determined by adding the scores of all sections.

Results. The score for this criterion was determined by adding the numbers provided by the teachers for each item.

Methods. The score for the criterion of methods was determined by adding the number given each item by the teacher. Some teachers used a check (✓) mark in items 12 and 13 rather than 0, 1 or 2. In this case 2 was assigned to the item if only one of the sub-items was checked. One was assigned if two or more of the sub-items were checked.

TABLE VII

SCORES ASSIGNED ITEMS FOR THE CRITERION OF FLEXIBILITY

Section	Item	Score assigned each item
A	1,2,3	1
A	4,5	2
A	6	3
B	7	1
B	8	2
B	9	4
B	10	5
C	11	1
C	12	2
C	13	4
C	14	6
D	15	1
D	16	2
D	17	3
D	18	4
E	19	1
E	20	2
E	21	3
E	22	4
F	23	1
F	24	2
F	25	3
F	26	4

Coordination and cooperation. These two criteria were scored in the same way by adding numbers provided for each item by the respondents.

Activities materializing. The number provided by the respondents in item three was divided by the total of the numbers given for items one and two. Thus a percentage figure was the score. By using this method, programs were penalized for planning more than was started.

Maintenance of activity. The number given item one of this criterion was divided by the number given in item three of the preceding criterion which was "activities materializing". This answer was converted to a percentage. The same method was used to score items two and three of this criterion except that only one-half of the percentage score for each item, two and three, was added to the score of item one to arrive at the total score. The half-score was given item two because it was deemed unwise to give full credit for combination of planned courses and activities caused by a declining attendance. Likewise it was deemed unwise to give full credit to courses and activities which were held in excess of those planned because in most cases relatively few additional meetings were held.

An example will show also how the two criteria were scored:

Criterion VIII

Item

1. $\frac{3}{1}$
 2. $\frac{1}{4}$ $3 + 1 = 4$
 3. $\frac{1}{4}$ $4 \div 4 = 1 \times 100 = 100 \%$
- criterion score = 100

Criterion IX

Item

1. $\frac{3}{4}$ $3 \div 4$ (from item 3 above) = $.75 \times 100 = 75 \%$
 2. $\frac{2}{4}$ $2 \div 4$ (from item 3 above) = $.50 \times 100 = 50\% \times \frac{1}{2} = 25 \%$
 3. $\frac{2}{4}$ $2 \div 4$ (from item 3 above) = $.50 \times 100 = 50\% \times \frac{1}{2} = 25 \%$
- Total = 125 %

criterion score = 125

Percentage of attendance. The percentage score provided by the teachers for this criterion was used as the criterion score.

Analyzing the Data

The score for each criterion was placed in red in the lefthand margin of the questionnaire and near each criterion. All questionnaires were coded. The code number, criterion scores and evaluation practice scores were punched on International Business

Machine Cards. These cards were used to collect data for the calculation of all possible Pearson correlations for all the scores of each criterion in relation to all the scores of every other criterion. The formula used for this calculation was:

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Table VIII shows the intercorrelation coefficients for each criterion in relation to every other criterion.

Table IX shows the significance of the composite correlation coefficient for each criterion. The composite correlation coefficient was determined by calculating the arithmetic mean of the sum of the intercorrelation coefficients for each criterion shown in Table VIII. The sums of pairs varies because not all items were answered in each questionnaire. All cards with unusable data for a certain criterion were removed in making the machine calculations.

The 95 per cent level was selected as the point for a correlation coefficient to reach if it was to be accepted. The figures in column b of Table IX were interpolated from a table appearing in Dixon and Massey.²

²Wilfred J. Dixon and Frank J. Massey, Jr., Introduction to Statistical Analysis, New York: McGraw-Hill Book Company, Inc., 1951, P. 164.

TABLE VIII

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INTERCORRELATION COEFFICIENTS OF THE TEN CRITERIA

	Relative size of program	Rural clientele served	Flexibility	Results	Methods	Coordination	Cooperation	Activities materializing	Maintenance of activity	Percentage of attendance
I	I	II	III	IV	V	VI	VII	VIII	IX	X
Relative size of program		.088	.096	.090	.004	.038	.042	.020	.164	-.679
II										
Rural clientele served	.088		.159	.190	.293	.183	.191	-.014	.092	-.027
III										
Flexibility	.096	.159		.188	.276	.129	.189	.044	.092	-.027
IV										
Results	.090	.190	.118		.319	.138	.163	-.003	.088	.049
V										
Methods	.004	.293	.276	.319		.415	.355	-.125	.061	.088
VI										
Coordination	.038	.183	.129	.138	.415		.531	-.173	.069	.354
VII										
Cooperation	.042	.191	.189	.163	.355	.531		-.086	.163	.192
VIII										
Activities materializing	.020	-.014	.004	-.003	-.125	-.173	-.086		-.121	-.109
IX										
Maintenance of activity	.164	.092	-.053	.088	.061	.069	.163	-.121		.185
X										
Percentage of attendance	-.679	-.027	.633	.049	.088	.354	.192	-.109	.185	

TABLE IX

SIGNIFICANCE OF THE COMPOSITE CORRELATION COEFFICIENTS FOR EACH CRITERION

Criterion	Sum of Pairs of correlated criterion scores	Mean number of pairs	Correlation coefficients required for 95% level of significance	Composite correlation coefficient	Usable- ness of criterion
	(a)	(a ÷ 9)	(b)	(c)	(d)
I Relative size of program	2126	236	.133	-.015	rejected
II Rural clien- tele served	2979	331	.112	.128	accepted
III Flexibility	2979	331	.112	.171	accepted
IV Results	2945	327	.113	.128	accepted
V Methods	2971	330	.112	.187	accepted
VI Coordination	2939	326	.113	.187	accepted
VII Cooperation	2950	328	.113	.193	accepted
VIII Activities materializing	2883	320	.114	-.067	rejected
IX Maintenance of activity	2848	316	.115	.072	rejected
X Percentage of Attendance	2828	314	.115	.076	rejected

Tables VIII and IX show that criteria I, VIII, IX and X as measured and defined in this study are independent of each other and generally independent of the remaining six criteria. Although not high in correlation the remaining criteria are significantly related. The composite correlation coefficients for these criteria are:

VII	.193	III	.171
VI	.187	II	.128
V	.187	IV	.128

Even though the correlation coefficients are low for these six criteria, they apparently measure some general aspects of programs in adult education in vocational agriculture which are to be considered good in this study.

It is interesting to note in a study of identification of educational needs of adults in general education that Kempfer found the same six criteria to be significantly related, with one exception.³ He found "relative size of program" to be significant whereas in this study "results" was significant. Kempfer did not use the criterion of "results". He used nine criteria similar to the nine in this study. The criterion "results" was used in addition to the nine used by Kempfer.

³Homer Kempfer, Identifying Educational Needs of Adults. Office of Education, Circular No. 330, Federal Security Agency, Washington, D. C.: Government Printing Office, 1951, P. 7.

Perhaps of larger significance is the fact that both the findings of Kempfer and the findings of this study showed that essentially the same criteria with comparable measures were found to be independent of each other and of the other criteria.

The three criteria in this study, "activities materializing," "maintenance of activity" and "percentage of attendance" were comparable to "activities materializing," "group survival" and "persistence of attendance" in the study made by Kempfer.

A more detailed description of the criteria is needed to provide more understanding on the interrelationships.

Analyzing the Criteria

Criterion I, Relative size of program. The criterion, "relative size of program," showed next to the least dependence of the ten criteria. There may be two reasons for this. Exactly one hundred of the returned questionnaires provided either no information or inadequate information for this criterion. A problem was noted in using this item in the trial of the questionnaire. The question was changed, tried again and appeared to be satisfactory. Many teachers apparently did not know how many farmers were in their school service area and/or did not have records of a nature that would provide total hours of attendance. The second

reason for low dependence of this criterion was that programs of adult education in vocational agriculture usually do not involve large numbers due to the systematic nature of instruction. This study indicated that the relative size of a program is independent of the quality of a program. Kempfer found that "relative size of program" had the lowest dependence of the six interdependent criteria in his study.⁴ This indicated that the criterion, "relative size of program," was not as good as other criteria in appraising general programs of adult education. In this study "relative size of program" and "percentage of attendance" had the highest negative correlation of all 45 correlations. This does not seem unreasonable. "Relative size of program" was slightly related to "maintenance of activity" but independent of all other criteria.

Table X shows a heavy grouping of scores at the lower end of the frequency distribution. It may be that a finer measure for size than the clock-hour index is needed for vocational agriculture. As the same problem was noted in Kempfer's study it may be necessary to devise another method for measuring relative size. Certainly the lack of importance of relative size found in the two studies

⁴Ibid., P. 7.

TABLE X

DISTRIBUTION OF THE QUANTITY OF ADULT EDUCATION PROVIDED
BY 242 PROGRAMS

Clock-hour index	Number of cases	Clock-hour index	Number of cases
1	2	1	2
15 - 49	2	7 - 7.99	2
14 - 14.99	0	6 - 6.99	11
13 - 13.99	2	5 - 5.99	10
12 - 12.99	1	4 - 4.99	18
11 - 11.99	3	3 - 3.99	19
10 - 10.99	2	2 - 2.99	49
9 - 9.99	0	1 - 1.99	49
8 - 8.99	5	0 - .99	69
Total			242

does not negate the importance attached to this criterion by teachers, school administrators and those who pay for the program.

Criterion II. Rural clientele served. The distribution of rural population segments served as shown in Table XI was more nearly normal than the distribution of the clock-hour-index scores for criterion I. Serving rural groups appeared to be more highly

TABLE XI

DISTRIBUTION OF THE NUMBER OF RURAL CLIENTELE SERVED BY 352
ADULT EDUCATION PROGRAMS

Rural population segments served	Number of cases	Rural population segments served	Number of cases
1	2	1	2
16	1	8	29
15	0	7	37
14	2	6	40
13	4	5	50
12	7	4	62
11	9	3	36
10	16	2	22
9	22	1	15
		Total	352

related to "methods" than to the other criteria. There was also a relation to "flexibility," "results," "coordination" and "cooperation." It appeared that teachers of agriculture were cognizant of rural population groups and were devising ways and means of meeting their needs.

TABLE XII

DISTRIBUTION OF THE SCORES ON FLEXIBILITY IN 352 PROGRAMS
OF ADULT EDUCATION

Flexibility score	Number of cases	Flexibility score	Number of cases
1	2	1	2
20 - 24	6	10 - 11.99	68
20 - 21.99	4	8 - 9.99	100
18 - 19.99	9	6 - 7.99	93
16 - 17.99	7	4 - 5.99	3
14 - 15.99	25	2 - 3.99	0
12 - 13.99	37	0 - 1.99	0
		Total	352

Criterion III, Flexibility. The cases in this criterion also had more nearly normal distribution than did the cases in some of the other criteria. (See Table XII.) It appeared to be very significant that when a flexible program was conducted farmers attended more regularly. Of the 45 correlation coefficients shown in Table VIII, the highest correlation was shown between "flexibility" and "percentage of attendance." There was also a

positive and strong relationship between "flexibility" and "methods." This might be expected. "Cooperation" and "rural clientele served" were related to "flexibility." This study showed what leaders in the field have stressed for a number of years. It is highly important to provide systematic instruction at a time of the day, week and year and at a place which will more fully meet the needs of farm people.

Criterion IV, Results. The distribution of cases in this criterion was peculiar, which can be seen by referring to Table XIII. It indicated a great difference in counting or defining approved practices. The unusually high scores between 90 and 600 were due to an extremely large number of approved practices reported by some teachers. The criterion of "results" is extremely difficult to measure, a fact noted by several of the respondents. As stated earlier, an attempt was made to measure qualitative as well as quantitative results. It is admittedly difficult to separate results due to instruction in one program from other influences.

In this study "results" was found to be related to "methods," "rural clientele served," "cooperation" and "coordination."

TABLE XIII

DISTRIBUTION OF THE SCORES ON RESULTS IN 346 PROGRAMS OF
ADULT EDUCATION

Scores on results	Number of cases	Scores on results	Number of cases
1	2	1	2
90 - 600	31	40 - 49.9	43
80 - 89.9	10	30 - 39.9	49
70 - 79.9	8	20 - 29.9	62
60 - 69.9	20	10 - 19.9	72
50 - 59.9	24	0 - 9.9	27
		Total	346

Criterion V, Methods. There appeared to be a wide range of methods used and a fairly uniform distribution of the scores as shown in Table XIV. This criterion was one of the more highly dependent criteria. It appeared to be highly related to "coordination," "cooperation," "results," "rural clientele served" and "flexibility." Apparently good methods were more effective when the program was coordinated with other adult education activities in the community than when more flexibility

TABLE XIV

DISTRIBUTION OF THE SCORES ON METHODS IN 350 PROGRAMS OF
ADULT EDUCATION

Scores on methods	Number of cases	Scores on methods	Number of cases
1	2	1	2
20 - 36	25	10 - 11	61
18 - 19	21	8 - 9	39
16 - 17	49	6 - 7	26
14 - 15	59	0 - 5	9
12 - 13	61		
		Total	350

was used. The study showed no relation of "methods" to "relative size of program," "maintenance of activity" or "percentage of attendance." There was almost a negative correlation to "activities materializing." It might be expected that good methods would be highly related to quality in all other parts of the program. The lack of fulfillment of this expectation might be due to the crude scales of measurement used and/or contamination by other factors not sifted out in the study.

TABLE XV

DISTRIBUTION OF THE SCORES ON COORDINATION IN 345 PROGRAMS
OF ADULT EDUCATION

Scores on coordination	Number of cases	Scores on coordination	Number of cases
1	2	1	2
10 - 31	25	4	65
9	21	3	40
8	39	2	33
7	29	0 - 1	7
6	44		
5	42		
		Total	345

Criterion VI, Coordination. Although this criterion was looked upon with most disfavor by the judges, Table XV shows that it rated high when correlated with other criteria in this study. As might be expected, "coordination" showed most relation to "cooperation." These two are closely related and perhaps should have no distinction made between them. As stated in the preceding chapter, measures were developed to

indicate the method of coordination and the type of cooperation. Apparently none of the criteria was positively related with "activities materializing" and "coordination" was no exception. In fact, next to the highest negative relation in 45 correlations was registered by these two criteria. Criteria showing positive relation to "coordination" were "percentage of attendance," "rural clientele served," "results" and "flexibility." No relation was shown to "relative size of program" or to "maintenance of activity."

Criterion VII. Cooperation. As shown in Table XVI, this criterion had a fairly even distribution of scores among the 347 schools reporting. There was a slight grouping of schools at the upper end of the distribution. This indicates that all teachers of adult classes in vocational agriculture did considerable cooperation as measured in this study and that over half the programs rated high on this criterion.

As indicated in the previous criterion, "cooperation" showed a higher relation to "coordination" than did any other criterion. The one other criterion that also rated high in its relation to "cooperation" was "methods". All other criteria were positively related to "cooperation" except "relative size of program" and "activities materializing."

TABLE XVI

DISTRIBUTION OF THE SCORES ON COOPERATION IN 347 PROGRAMS
OF ADULT EDUCATION

Scores on cooperation	Number of cases	Scores on cooperation	Number of cases
1	2	1	2
18 - 31	24	8 - 9	33
16 - 17	47	6 - 7	33
14 - 15	47	4 - 5	34
12 - 13	51	0 - 3	23
10 - 11	55		
		Total	347

Criterion, VIII, Activities materializing. Apparently most of the schools reporting had 100 per cent of their program activities materializing according to Table XVII. Yet the criterion of "coordination" had the lowest mean correlation coefficient of the ten criteria analyzed. The original assump-

TABLE XVII

DISTRIBUTION OF SCORES ON ACTIVITIES MATERIALIZING IN 336
PROGRAMS OF ADULT EDUCATION

Scores on activities materializing	Number of cases	Scores on activities materializing	Number of cases
1	2	1	2
100 - 100.9	216	40 - 49.9	7
90 - 99.9	2	30 - 39.9	16
80 - 89.9	10	20 - 29.9	11
70 - 79.9	7	10 - 19.9	3
60 - 69.9	19	0 - 10	5
50 - 59.9	40		
		Total	336

tion that activities will materialize if they are based on educational needs and interests of farm people and if they are adequately planned, announced and executed either was not valid or there were factors in this study which caused a poor relation

to exist between this criterion and the others. Another factor could be that the superior teachers were trying new activities, part of which materialized, while the more conventional teachers organized fewer activities and attempted only those which they were quite sure would materialize.

None of the other nine criteria was positively related to the criterion of "activities materializing." Three had a slightly negative relation. These were "coordination," "methods" and "maintenance of activity."

Kempfer found essentially the same results with this criterion.

Criterion IX, Maintenance of activity. The evidence shown in Table XVIII indicates that this criterion bore no consistent dependent relation to the other nine criteria. It did show some dependent relation to "cooperation," "percentage of attendance" and "relative size of program." Apparently there were factors which prevented the development of clear-cut relations of this criterion to other criteria, or the assumption is not valid that properly conducted activities based on the

TABLE XVIII

DISTRIBUTION OF SCORES ON MAINTENANCE OF ACTIVITY IN 331
ADULT EDUCATION PROGRAMS

Scores on maintenance of activity	Number of cases	Scores on maintenance of activity	Number of cases
1	2	1	2
160 - 209.9	3	70 - 79.9	7
150 - 159.9	56	60 - 69.9	2
140 - 149.9	3	50 - 59.9	5
130 - 139.9	15	40 - 49.9	0
120 - 129.9	32	30 - 39.9	1
110 - 119.9	39	20 - 29.9	1
100 - 109.9	156	10 - 19.9	0
90 - 99.9	6	0 - 9.9	3
80 - 89.9	2		
		Total	331

educational needs and interests recognized by farm people would cause people to attend throughout the period planned.

Criterion X, Percentage of attendance. This criterion, as shown in Table XIX, was also in the middleground of no

TABLE XIX

DISTRIBUTION OF THE PERCENTAGE OF ATTENDANCE IN 330 PROGRAMS
OF ADULT EDUCATION

Percentage of attendance	Number of cases	Percentage of attendance	Number of cases
1	2	1	2
100	3	40 - 49.9	19
90 - 99.9	22	30 - 39.9	12
80 - 89.9	76	20 - 29.9	7
70 - 79.9	80	10 - 19.9	21
60 - 69.9	56	0 - 9.9	7
50 - 59.9	27		
		Total	330

relation, either positive or negative, to other criteria.

"Percentage of attendance" showed a high correlation with

"flexibility," moderate correlation with "coordination," "cooperation" and "maintenance of activity" and a high negative relation

to "relative size of program." The last result is understandable because large numbers of people enrolled may mean a lower percentage of attendance.

Importance is usually attached to "percentage of attendance" by supervisors in vocational agriculture and others charged with the administration of such programs. The results found in this study may indicate that this is a poor method of evaluation. Other bases for evaluation as indicated previously are more valid than "percentage of attendance." This observation might be made also on "relative size of program."

Kempfer also found that "percentage of attendance," "maintenance of activity" (called group survival by him) and "activities materializing" were not related to the other criteria which were the same in both studies except that the criterion of "results" was added to this study.⁵

The analysis of the criteria indicates that the four criteria, "relative size of program," "activities materializing," "maintenance of activity" and "percentage of attendance" cannot

⁵ Ibid... P. 8, 20-23.

be used in this study to identify practices used in evaluation. Although ruled valid by the judges, these criteria need further investigation if they are to be used as a basis for evaluation of programs of adult education in vocational agriculture.

The six criteria, "rural clientele served," "flexibility," "results," "methods," "coordination," and "cooperation" ruled valid by the judges and proved to be interdependent through methods used in this study, will be used for analysing the evaluation practices.

CHAPTER V

AN ANALYSIS OF PRACTICES USED IN EVALUATION IN ADULT EDUCATION IN VOCATIONAL AGRICULTURE

Thirty evaluation practices were listed on the questionnaire with the ten criteria. (See appendix F.) These were rated by the 352 teachers of vocational agriculture who returned usable questionnaires. Instructions to the teachers were:

"Rate each evaluation practice listed below according to the following rating scale:
0 if seldom or never used
1 if occasionally or sometimes used
2 if ordinarily or usually used."

The rating of the practices by each teacher and the information on the six valid criteria provided the data used in determining the worth of each evaluation practice.

Method of Analysis

The relation was established between each of the 30 evaluation practices and each of the six valid criteria. Since these criteria, individually and collectively, were considered as measures of the quality of a program of adult education in

vocational agriculture, the assumption was made that where programs scored high on these criteria, evaluation practices being used were good. High scores on all criteria added to the evidence that good evaluation practices were associated with good results.

Programs supplying sufficient data on criteria were ranked from superior to inferior. This ranking constituted a scale which was formed into suitable class intervals and frequency distributions.

Each practice was rated with each criterion by comparing the use of the practice to each criterion. This process is shown in Tables XX, XXI, XXII, and XXIII. There are 180 similar tables. Each table constitutes an item analysis of one practice and one of the criteria.

A study of the four tables reveals the analytical process. Table XX is the analysis of one evaluation practice and one criterion. The range of scores for the criterion was determined. Suitable class intervals were constructed. The distribution for each of the three ratings of the evaluation practice "cooperative organizations formed are noted" was determined for the cases in each class interval. Of the 25 programs scoring 20 to 36, eight

TABLE XX

ILLUSTRATION OF POSITIVE RESULTS OF ITEM ANALYSIS WHICH IS
THE RELATION OF THE EVALUATION PRACTICE "COOPERATIVE ORGANI-
ZATION FORMED ARE NOTED" AND THE CRITERION "METHODS"

Methods score	Number of cases	Rating of "2" "ordinarily or usually"		Rating of "1" "occasionally or sometimes"		Rating of "0" "seldom or never"	
		Freq- uency	Interval value x frequency	Freq- uency	Interval value x frequency	Freq- uency	Interval value x frequency
1	2	3	4	5	6	7	8
20-36	25	8	220 ¹	8	220	9	247.5
18-19	21	6	108	4	72	11	198
16-17	49	<u>17</u> ²	112	18	288	24	384
14-15	59	5	70	<u>17</u>	238	<u>37</u>	518
12-13	61	3	36	<u>10</u>	120	<u>48</u>	576
10-11	61	6	60	8	80	47	470
8-9	39	2	16	6	48	31	248
6-7	26	1	6	2	12	23	138
0-5	9	0	—	0	—	9	—
Total	350	38	628	73	1078	239	2779.5
Uncorrected mean score		16.53		14.77		11.63	
Correction		.5		.5		.5	
Corrected mean score		17.03		15.27		12.13	

¹The midpoint for this class interval was 28. Deducting the correction factor of .5 gives the interval value of 27.5.

²Means in each frequency distribution are marked:

³The sum of column 4 is divided by the sum of column 3 to provide the uncorrected mean score.

ordinarily or usually used this evaluation practice. Eight multiplied by 27.5 gave 220. A larger class interval was selected in this case to provide a more compact grouping of scores. In the remaining class intervals the frequency was multiplied by the lower limit of the interval. The total of column four was divided by the total of column three to give the uncorrected mean score for the rating of ordinarily or usually used. On the assumption that the scores were evenly distributed in each interval a correction factor of .5 was used to give the correct mean score for the criterion of "methods". The number .5 is the distance from the lower limit to the midpoint in the interval.

In a similar way the ratings of occasionally or sometimes and seldom or never were analyzed.

A positive result of the item analysis is shown in Table XX. The teachers ordinarily or usually using the practice of noting cooperative organizations formed had a mean score of 17.03 on "methods" while teachers occasionally or sometimes using the practice had a 12.13 mean score for "methods." The means were marked in each frequency column opposite the scale value to provide easy visual comparison. From this analysis one can conclude that the practice of noting cooperative organizations formed is a good practice when measured against the criterion of instructional methods used in the program.

The three mean scores from each of the 180 tables are used later to provide an analysis of each evaluation practice.

Table XXI shows a negative result of item analysis. The correction of five was used because each class interval included ten and the lower point for each interval was used in calculating the figures for column four. The first class interval shows that teachers seldom or never or occasionally or sometimes using the practice of maintaining a check of approved practices on a chart had higher results from instruction than teachers ordinarily or usually using the practice. This is evidence that a negative relationship exists between the practice and the criterion. Teachers that do not maintain a check of approved practices on a chart get higher results from instruction. Further analysis of the practice with the other five criteria should indicate whether the practice is or is not to be recommended for use.

Table XXII shows an unstable result of item analysis. This item analysis is unstable because of the skewed distribution of the few ratings of ordinarily or usually listed for this practice as shown in column three. The five cases at the upper end of column three put undue value on the use of the practice and cause the mean score for the "2" rating to be nearly twice

TABLE XXI

ILLUSTRATION OF NEGATIVE RESULT OF ITEM ANALYSIS WHICH IS THE
RELATION OF THE EVALUATION PRACTICE "A CHECK OF APPROVED PRACTICES"
IS MAINTAINED ON A CHART" AND THE CRITERION "RESULTS"

Results score	Number of cases	Rating of "2" "ordinarily or usually"		Rating of "1" "occasionally or sometimes"		Rating of "0" "seldom or never"	
		Freq- uency	Interval value x frequency	Freq- uency	Interval value x frequency	Freq- uency	Interval value x frequency
1	2	3	4	5	6	7	8
90-463	30	2	542 ¹	5	1355	23	6233
80-39.9	10	2	160	3	240	5	400
70-79.9	8	2	140	—	—	6	420
60-69.9	20	3	180	3	180	14	840
50-59.9	24	5	250	6	300	13	650
40-49.9	43	6	240	9	360	28	1120
30-39.9	49	6	180	7	210	36	1080
20-29.9	62	10	200	7	140	45	900
10-19.9	72	8	80	11	110	53	530
0-9.9	27	3	—	3	—	21	—
Total	345	47	1972	54	2895	244	12173
Uncorrected mean score			41.96		53.61		49.89
Correction			5.00		5.00		5.00
Corrected mean score			46.96		58.61		54.89

¹The midpoint for this class interval was 276. Deducting the correction factor of 5 gives the interval value of 271.

TABLE XXII

ILLUSTRATION OF UNSTABLE RESULT OF ITEM ANALYSIS WHICH IS THE
RELATION OF THE EVALUATION PRACTICE "PART OF A SPECIAL FIELD DAY IS
DEVOTED TO EVALUATION" AND THE CRITERION "RESULTS"

Results score	Number of cases	Rating of "2" "ordinarily or usually"		Rating of "1" "occasionally or sometimes"		Rating of "0" "seldom or never"	
		Freq- uency	Interval value x frequency	Freq- uency	Interval value x frequency	Freq- uency	Interval value x frequency
1	2	3	4	5	6	7	8
90-463	30	<u>5</u>	1355 ¹	4	1084	21	5691
80- 89.9	10	--	--	3	240	7	560
70- 79.9	8	--	--	1	70	7	490
60- 69.9	20	1	60	2	120	<u>17</u>	1020
50- 59.9	24	1	50	<u>7</u>	350	<u>16</u>	800
40- 49.9	43	5	200	12	480	26	1040
30- 39.9	49	5	150	8	240	36	1080
20- 29.9	62	1	20	9	180	52	1040
10- 19.9	72	2	20	9	90	61	610
0- 9.9	27	0	--	0	--	27	--
Total	345	20	1855	55	2854	270	12331
Uncorrected mean score		92.75		51.89		45.67	
Correction		5.00		5.00		5.00	
Corrected mean score		97.75		56.89		50.67	

¹The midpoint for this class interval was 276. Deducting the correction factor of 5 gives the interval value of 271.

as much as the mean score for the "1" or "0" rating. Although column five has more cases than column three, the number is very low compared to the cases in column seven. Yet the difference between the mean scores for "1" and "0" is not great. The skewness of the distribution of cases in column three and the unusual result of the analysis of columns five and six, seven and eight make it unsafe to predict the value of the practice as a method for securing results for instruction.

Inconclusive results of item analysis are shown in Table XXIII. The mean score for each rating varies only slightly. Apparently there is little effect on the flexibility of the program of adult education in vocational agriculture when advisory committees either ordinarily or seldom assist in the evaluation of the program.

The four tables just discussed (XX - XXIII) show four possible results of the item analysis. Each of the remaining 176 tables used for this part of the analysis may be put in one of the four categories just described. However, most of the tables contain data that indicate a positive result of item analysis. To provide a composite result of all item analyses for each practice, the mean score for each of the three ratings for each prac-

TABLE XXIII

ILLUSTRATION OF INCONCLUSIVE RESULTS OF ITEM ANALYSIS WHICH IS THE RELATION OF THE EVALUATION PRACTICE "ADVISORY COMMITTEES ASSIST IN THE EVALUATION OF THE PROGRAM" AND THE CRITERION "FLEXIBILITY"

Flexi- bility score	Number of cases	Rating of "2" "ordinarily or usually"		Rating of "1" "occasionally or sometimes"		Rating of "0" "seldom or never"	
		Freq- uency	Interval value x frequency	Freq- uency	Interval value x frequency	Freq- uency	Interval value x frequency
1	2	3	4	5	6	7	8
22-24	6	1	22.5	1	22.5	4	90
20-21	4	2	40	0	--	2	40
18-19	9	1	18	2	36	6	108
16-17	7	3	48	--	--	4	64
14-15	25	4	56	7	98	14	196
12-13	37	5	60	9	108	23	276
10-11	68	14	140	14	140	40	400
8-9	100	<u>25</u>	200	<u>19</u>	152	<u>56</u>	448
6-7	93	19	114	18	108	56	336
4-5	3	1	4	0	--	2	8
0-3	0	0	--	0	--	0	--
Total	352	75	702.5	70	664.5	207	1966
Uncorrected Mean Score			9.37		9.49		9.50
Correction			.5		.5		.5
Corrected Mean Score			9.37		9.99		10.00

tice was combined for all criteria. Since each criterion had a different scale of measure, the mean criterion scores for each practice could not be combined directly. The comparison between mean criterion scores is shown by using an index which indicates the relative size of the difference between the three mean criterion scores for each practice. The mean criterion score for the seldom or never rating was chosen for the base of the index.

The seldom or never mean score divided by itself provides an index of (1) which is the value of the practice when not used. The occasionally or sometimes and ordinarily or usually mean score divided by the seldom or never base score provides a superiority index to use in judging the value of a practice. The practice increases in positive influence as the index becomes greater than (1) and increases in negative influence as the index becomes less than (1).

Analysis of the Evaluation Practices

The analysis of the evaluation practices includes a discussion of the practices which are listed in rank order of merit. The method of computation used to determine the superiority index is explained for the first practice. Criterion scores were based

on the following number of programs for each criterion: II, 352; III, 352; IV, 345; V, 350; VI, 345 and VII, 347.

Table XXIV lists the mean criterion scores for the practice being analysed. The previous section revealed the method used in determining the mean scores for each practice as it was related to each criterion. The seldom or never scores were chosen as the base. By dividing these scores into the ordinarily or usually scores a superiority index was determined. For criterion II, the figure was 1.26. This means that the practice of "comparing progress with progress in other years and progress in other communities" is good when measured against the criterion of "rural clientele served." The practice is still good when occasionally or sometimes used as shown by the 1.08 superiority index. All index computations were made for each of the criteria listed in the table. The mean superiority index is the arithmetic mean for the totals of the columns (d) and (e). To arrive at the composite of each superiority index for the practice being analyzed the figure 1.64, which is the superiority index for ordinarily or usually scores, was multiplied by (2) to put it in proper relationship with the occasionally or sometimes index of 1.35. The sum of 3.28 and 1.35 was 4.63. This total divided by 3, which was the number of units represented in 3.28, gave 1.54, the composite superiority index for the practice analyzed

TABLE XXIV

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "PROGRESS IS COMPARED WITH PROGRESS OF
OTHER YEARS AND PROGRESS IN OTHER COMMUNITIES"

Criterion	Number among 352 programs using the practice			Superiority index	
	91	139	122	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			(d)	(e)
	(a)	(b)	(c)		
II Rural Clientele served	6.62	5.69	5.24	1.26	1.08
III Flexibility	10.54	10.23	9.57	1.10	1.07
IV Results ¹	73.40	59.21	24.34	3.01	2.43
V Methods ²	15.16	13.18	12.38	1.22	1.06
VI Coordination ³	7.83	5.96	4.59	1.70	1.30
VII Cooperation ⁴	13.81	10.54	9.10	1.52	1.16
Mean superiority index				1.64	1.35
Composite superiority index					1.54

¹Based on 345 programs

²Based on 350 programs

³Based on 345 programs

⁴Based on 347 programs

in Table XXIV. It is this figure which enables one to compare the worth of each evaluation practice with every other evaluation practice.

1. "Progress is compared with progress of other years and progress in other communities."

A study of Table XXIV shows that the practice of comparing progress with past performance and with other communities when ordinarily or usually used in the adult education program in vocational agriculture was superior as measured by the six criteria. The programs were still good but of lower quality when the practice was occasionally or sometimes used. The lowest criterion scores were evident when the practice was seldom or never used. The practice was especially valuable in getting "results" as shown by the superiority index of 3.01 when ordinarily used. This is the only superiority index above (3) in the 360 indices. In criterion II, which is a measure of "rural clientele served", Table XXIV shows that an average of 6.62 rural clientele groups were served when this practice was ordinarily or usually used. When occasionally or sometimes used, 5.69 groups were served and 5.24 groups participated when the practice was seldom or never used. Information of this type that can be secured from the tables in this section.

The analysis of the practice as shown in Table XXIV provides clear-cut evidence that where the "progress is compared with progress of other years and progress in other communities," programs of adult education in vocational agriculture rate high on the six valid criteria as determined in this study.

2. "Cooperative activities developed are noted."

Being conscious of the development of cooperative activities appears to be a valuable practice. As seen in Table XXV, the superiority index of 2.20 for the practice when ordinarily used indicates that the criterion "results" is excellent in the program of adult education. This is one of seven superiority indices in the 360 that is over (2) and therefore important.

The practice of noting the cooperative activities developed was ordinarily used by slightly fewer teachers than the practice of comparing progress with past performance and with other communities yet it appears to be equally significant in developing a high quality program of adult education in vocational agriculture.

3. "Business men assist in the evaluation of the program."

Apparently the value of using business men in a rural community to assist with evaluation has been underestimated. A study of Table XXVI reveals that although the number of teachers

TABLE XXV

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION
PROGRAMS AND THE EVALUATION PRACTICE "COOPERATIVE
ACTIVITIES DEVELOPED ARE NOTED"

Criterion	Number among 352 programs using the practice			Superiority index	
	74	119	159	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	6.32	6.17	5.24	1.21	1.18
III Flexibility	10.82	10.48	8.76	1.24	1.20
IV Results	75.71	67.58	34.38	2.20	1.96
V Methods	16.05	14.16	10.82	1.48	1.31
VI Coordination	8.88	6.68	4.63	1.92	1.44
VII Cooperation	14.83	11.96	9.12	1.63	1.31
Mean superiority index				1.61	1.40
Composite superiority index					1.54

TABLE XXVI

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "BUSINESS MEN ASSIST IN THE
EVALUATION OF THE PROGRAM"

Criterion	Number among 352 programs using the practice			Superiority index	
	19 Ordinarily or usually	59 Occasionally or sometimes	274 Seldom or never	a ÷ c	b ÷ c
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	8.26	6.93	5.36	1.54	1.29
III Flexibility	11.93	10.19	9.83	1.16	1.04
IV Results	107.89	71.53	46.51	2.32	1.54
V Methods	16.29	16.09	12.50	1.30	1.29
VI Coordination	10.26	8.30	5.24	1.96	1.58
VII Cooperation	16.50	11.99	10.40	1.59	1.15
Mean superiority index				1.64	1.32
Composite superiority index					1.53

who either ordinarily or occasionally use the practice is not large compared to the total number in the study, the value of the practice rates nearly at the top of the rank order of practices. Again, the criterion of "results" is strongly associated with an evaluation practice which in this case is the use of local business men in the evaluation program. This practice had the least effect on flexibility. The practice appears to be good.

4. "Leadership development is noted"

Table XXVII discloses that the practice of noting leadership development is highly associated with the criterion "results". Next in order of association are "coordination" and "cooperation". This evaluation practice is highly related to "methods" and least related, although valuably, to "flexibility" and "rural clientele served." The practice of educating for leadership apparently has high value.

According to the results of this study good programs of adult education in vocational agriculture are continuing to recognize leadership development which, as judged by the six criteria, builds effective programs of adult education.

5. "Cooperative organizations formed are noted"

This evaluation practice is closely related to the practice

TABLE XXVII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS AND THE EVALUATION PRACTICE "LEADERSHIP DEVELOPMENT IS NOTED"

Criterion	Number among 352 programs using the practice			Superiority index	
	138	136	78	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			(d)	(e)
	(a)	(b)	(c)		
II Rural clientele served	6.14	5.69	5.28	1.16	1.08
III Flexibility	10.44	10.08	8.94	1.17	1.13
IV Results	63.01	55.39	29.24	2.15	1.86
V Methods	14.96	13.12	10.41	1.44	1.26
VI Coordination	7.46	5.93	4.03	1.85	1.47
VII Cooperation	13.74	10.41	8.50	1.62	1.22
Mean superiority index				1.56	1.34
Composite superiority index				1.49	

of noting cooperative activities developed and some aspects of the practice of noting leadership development. The relation is further substantiated by the closeness of the composite superiority index for the three practices. Table XXVIII shows that being cognizant of cooperative organizations formed has greatest association with "results". Almost equal in value is the association with "coordination". One would expect "coordination" to rate high when this evaluation practice is used. Although not used by a high number of teachers the noting of cooperative organizations formed apparently has a very significant association with the total program of adult education in vocational agriculture. Using this practice may reflect the development of some basic goals of agricultural education.

6. "Other agricultural agencies assist in the evaluation of the program"

One would expect to observe a highly coordinated program if other agricultural agencies were used in evaluating the program of adult education in vocational agriculture. The data in Table XXIX substantiate that expectation. Likewise the data show that when other agricultural agencies are used to assist in the evaluation of the program "results" and "coordination" are good

TABLE XXVIII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "COOPERATIVE ORGANIZATIONS FORMED ARE
NOTED"

Criterion	Number among the 352 programs using the practice			Superiority index	
	38	73	241	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	7.67	6.45	5.32	1.44	1.21
III Flexibility	11.62	10.27	9.20	1.26	1.11
IV Results	82.19	69.22	45.61	1.80	1.52
V Methods	17.03	15.27	12.13	1.40	1.26
VI Coordination	9.80	7.24	5.31	1.84	1.36
VII Cooperation	15.20	13.27	10.03	1.52	1.32
Mean superiority index				1.54	1.30
Composite superiority index					1.46

TABLE XXIX

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "OTHER AGRICULTURAL AGENCIES ASSIST IN
THE EVALUATION OF THE PROGRAM"

Criterion	Number among 352 programs using the practice			Superiority index	
	27	94	231	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	6.96	6.22	5.46	1.27	1.14
III Flexibility	10.50	11.07	8.99	1.17	1.23
IV Results	82.12	65.33	46.70	1.76	1.40
V Methods	16.92	14.26	12.50	1.35	1.14
VI Coordination	9.39	7.61	5.24	1.72	1.45
VII Cooperation	15.91	13.38	9.61	1.66	1.39
Mean superiority index				1.50	1.29
Composite superiority index				1.43	

and "cooperation" is also very effective. Other aspects of the program represented by the remaining criteria are also of high quality when agricultural agencies assist in evaluation of the program.

7. "A list is made of the methods and devices to use in collecting evidence which will reveal that objectives are being met"

This practice is closely related to practice number (11) which calls for the use of clearly stated objectives to form the basis for evaluation. Apparently the two are closely related in practice, as shown by the closeness of the composite superiority indices for the practices. Determining the methods and devices to use in collecting evidence that objectives are being met yields high "results" as shown by a superiority index which is over "2". The practice has been recommended for at least two decades yet its use has been spotty as shown by Table XXX. For teachers of agriculture it may represent an academic approach to the evaluation of an action program. Yet by comparing the number of teachers who either ordinarily or occasionally use the practice there is overwhelming support for the high value indicated by the composite superiority index of 1.42. Over half the teachers in this study used the practice, which reflects a high-quality program as judged by the six criteria.

TABLE XXX

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "A LIST IS MADE OF THE METHODS AND
DEVICES TO USE IN COLLECTING EVIDENCE WHICH WILL REVEAL
THAT OBJECTIVES ARE BEING MET"

Criterion	Number among 352 programs using the practice			Superiority index	
	44	139	169	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	6.73	5.79	5.22	1.29	1.11
III Flexibility	12.38	10.34	9.51	1.30	1.09
IV Results	89.93	63.30	40.07	2.24	1.58
V Methods	14.88	14.18	12.49	1.19	1.14
VI Coordination	7.49	7.16	5.10	1.47	1.40
VII Cooperation	13.01	13.44	9.38	1.39	1.43
Mean superiority index				1.48	1.29
Composite superiority index					1.42

8. "Systematic study of the community is made to discover changes in farming due to instruction"

Over half the teachers in the study either ordinarily or occasionally made systematic studies in farming due to instruction. Table XXXI reveals that such studies appear to be very beneficial in the development of good programs of adult education. There seems to be a slightly negative relation to "flexibility" of the program when the practice is occasionally used. Highest value is shown in "results" when the practice was ordinarily used. This practice seems to be good.

9. "Class members assist in the evaluation of the results of instruction"

Here is strong evidence that evaluation by class members is very beneficial. Nearly two-thirds of the teachers reporting in the study either ordinarily or occasionally used the practice. Those teachers who ordinarily used the practice had higher quality programs in every phase based on the six criteria, than did teachers who only occasionally used the practice. Table XXXII shows that the practice is good.

10. "Part of a special field day is devoted to evaluation"

Using part of a special field day for evaluation has elements of self evaluation. It also contains large elements of group

TABLE XXXI

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "SYSTEMATIC STUDY OF THE COMMUNITY IS
MADE TO DISCOVER CHANGES IN FARMING DUE TO INSTRUCTION"

Criterion	Number among 352 programs using the practice			Superiority index	
	71	137	144		
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			a ÷ c	b ÷ c
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	6.38	5.85	5.40	1.18	1.08
III Flexibility	11.28	9.51	9.77	1.15	.97
IV Results	86.31	53.97	35.18	2.45	1.53
V Methods	15.59	13.16	12.19	1.28	1.08
VI Coordination	8.51	6.20	4.92	1.73	1.26
VII Cooperation	12.70	11.71	9.62	1.32	1.22
Mean superiority index				1.52	1.19
Composite superiority index				1.41	

TABLES XXXII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "CLASS MEMBERS ASSIST IN THE EVALUATION OF
THE RESULTS OF INSTRUCTION"

Criterion	Number among 352 programs using the practice			Superiority index	
	92	133	127		
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			a ÷ c	b ÷ c
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	6.30	5.77	5.30	1.19	1.09
III Flexibility	14.99	10.39	10.35	1.45	1.00
IV Results	65.46	60.64	42.84	1.53	1.52
V Methods	15.48	13.99	11.70	1.32	1.20
VI Coordination	8.24	6.47	4.44	1.86	1.46
VII Cooperation	14.17	11.61	8.87	1.60	1.31
Mean superiority index				1.49	1.25
Composite superiority index					1.41

evaluation as does the preceding practice. Although relatively few teachers either ordinarily or occasionally used part of a special field day for evaluation, the use of the practice is significantly related to good programs of adult education in vocational agriculture. There appears to be no relation between the occasional use of the practice and the "rural clientele served." Table XXXIII shows that in all other cases where the practice was either ordinarily or occasionally used the quality of the adult education program is good, judged on the five criteria.

11. "Clearly stated objectives are used to form the basis for evaluation"

Approximately 80 per cent of the teachers who reported for this study indicated that clearly stated objectives were either ordinarily or occasionally used as the basis for evaluation. The extensive use of the practices and its high value as indicated by the composite superiority index as shown in Table XXXIV is ample evidence that the practice is good and is effective for building a high quality program of adult education in vocational agriculture. If all education is to be based on clearly stated objectives then this practice should rate at the top rather than in eleventh place. Possible reasons for this placing will be revealed in the next chapter.

TABLE XXXIII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "PART OF A SPECIAL FIELD DAY IS DEVOTED
TO EVALUATION"

Criterion	Number among 352 programs using the practice			Superiority index	
	20	57	275	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	7.05	5.64	5.63	1.25	1.00
III Flexibility	11.30	11.30	9.23	1.22	1.22
IV Results	97.75	56.89	50.67	1.93	1.12
V Methods	15.08	16.11	10.53	1.43	1.53
VI Coordination	8.63	8.42	5.55	1.55	1.52
VII Cooperation	14.29	14.39	10.43	1.37	1.38
Mean superiority index				1.46	1.30
Composite superiority index				1.41	

TABLE XXXIV

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "CLEARLY STATED OBJECTIVES ARE USED TO
FORM THE BASIS FOR EVALUATION"

Criterion	Number among 352 programs using the practice			Superiority index	
	152	132	68	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	5.88	5.96	5.19	1.13	1.15
III Flexibility	13.43	9.92	9.03	1.49	1.10
IV Results	68.42	49.03	33.05	2.07	1.48
V Methods	14.22	13.27	11.32	1.26	1.17
VI Coordination	6.89	6.05	4.90	1.40	1.23
VII Cooperation	13.00	10.53	8.98	1.45	1.17
Mean superiority index				1.47	1.22
Composite superiority index				1.39	

12. "Other teachers in the school, administrators, school board members, state supervisory staff and college or university education staff help evaluate programs"

This is the first practice in the order of merit which calls for the use of educators in the evaluation of a program of adult education in vocational agriculture. Apparently this group has a contribution to make toward improving local programs but other methods of evaluation have a greater effect on quality of program. "Results" were more beneficial when the practice was occasionally used than when ordinarily used. In all other criterion measures the practice caused higher quality of program when ordinarily used than when occasionally used. The practice is definitely good as shown by Table XXXV.

13. "Plans and action are based on the analysis and interpretation of the results of evaluation"

Table XXXVI shows that the evaluation practice of basing plans and action on the analysis and interpretation of the results of evaluation is positively related to all six criteria for a good program. The lowest relation exists between the practice and the criterion of "flexibility". Apparently the patterns of length of class periods, length of courses, location of classes and other measures for flexibility have been somewhat standardized which may

TABLE XXXV

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS AND THE EVALUATION PRACTICE "OTHER TEACHERS IN THE SCHOOL, ADMINISTRATORS, SCHOOL BOARD MEMBERS, STATE SUPERVISORY STAFF AND COLLEGE OR UNIVERSITY EDUCATION STAFF HELP EVALUATE THE PROGRAM"

Criterion	Number among 352 programs using the practice			Superiority index	
	42	107	203	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	7.02	6.21	5.29	1.33	1.17
III Flexibility	11.18	10.56	9.43	1.18	1.12
IV Results	52.36	69.10	46.93	1.12	1.47
V Methods	16.33	14.40	11.95	1.37	1.20
VI Coordination	9.02	7.57	4.89	1.84	1.55
VII Cooperation	14.98	13.17	9.54	1.57	1.38
Mean superiority index				1.40	1.32
Composite superiority index				1.37	

TABLE XXXVI

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "PLANS AND ACTION ARE BASED ON THE
ANALYSIS AND INTERPRETATION OF THE RESULTS OF EVALUATION"

Criterion	Number among 352 programs using the practice			Superiority index	
	114	134	104	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	6.27	5.78	5.19	1.21	1.11
III Flexibility	10.14	9.80	9.74	1.04	1.01
IV Results	65.38	54.78	41.48	1.58	1.32
V Methods	14.89	13.18	11.73	1.27	1.12
VI Coordination	8.05	5.99	4.32	1.86	1.39
VII Cooperation	13.86	11.48	8.10	1.71	1.41
Mean superiority index				1.44	1.23
Composite superiority index				1.37	

have caused this low relation. A logical step in making use of the findings of evaluation is to base plans and action on the analysis and interpretation of the results of evaluation. It is difficult to determine why 104 teachers seldom or never use the practice. All teachers in the study used some of the 30 evaluation practices. It would seem illogical that evaluation stopped with a study of past performance. Apparently that is the case. However, the practice is shown to be valuable by the mathematical analyses.

14. "Enrollment records are analyzed to determine the extent to which the program serves all who want, need or can use adult education"

A study of Table XXXVII accompanying this practice discloses that of the six criteria "results" is most highly related to this practice. The criterion of rural clientele served ranks next to the lowest. Apparently the factor of "want" in the practice colors the results of the analysis. The practice is good, evidenced to some extent by the fact that 134 teachers in the study ordinarily analyzed enrollment records to determine the extent to which the program served all who wanted, needed or could use adult education.

15. "Results of instruction with class members are compared with the economic and social achievement of non-class members"

Although the number of teachers in the study who used this

TABLE XXXVII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "ENROLLMENT RECORDS ARE ANALYZED TO
DETERMINE THE EXTENT TO WHICH THE PROGRAM SERVES ALL WHO
WANT, NEED OR CAN USE ADULT EDUCATION"

Criterion	Number among 352 programs using the practice			Superiority index	
	134 Ordinarily or usually	115 Occasionally or sometimes	103 Seldom or never	a ÷ c	b ÷ c
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	6.30	5.36	5.30	1.19	1.01
III Flexibility	10.20	9.72	9.56	1.07	1.02
IV Results	60.20	57.57	34.53	1.74	1.68
V Methods	14.75	12.41	11.36	1.30	1.09
VI Coordination	7.28	6.67	4.18	1.74	1.60
VII Cooperation	12.56	11.28	9.03	1.39	1.25
Mean superiority index				1.40	1.28
Composite superiority index				1.36	

practice is small, there is a strong relation between the practice and the quality of the adult education program in vocational agriculture. In fact, the increase in the use of the practice will result in a proportionate increase in the quality of the program as shown in Table XXXVIII. As measured by the six criteria, those teachers ordinarily using the practice had consistently more superior programs than the teachers who occasionally used the practice.

16. "Practices used are observed on tours to farms of class members"

This is the first practice in the rank order of merit that deals almost entirely with an agricultural outcome. The first 15 practices deal with educational outcomes directly related to people. This observation indicates that teachers of vocational agriculture attach first importance to the determination of changes in people and secondary importance to changes in farming. Table XXXIX shows that over two-thirds of the teachers used tours to observe changes in farm practices. No doubt this method of evaluation has value in stimulating behavior changes which result in changed farm practices.

TABLE XXXVIII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS AND THE EVALUATION PRACTICE "RESULTS OF INSTRUCTION WITH CLASS MEMBERS ARE COMPARED WITH ECONOMIC AND SOCIAL ACHIEVEMENT OF NON-CLASS MEMBERS"

Criterion	Number among 352 programs using the practice			Superiority index	
	54	82	216		
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			a ÷ c	b ÷ c
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	6.18	5.99	5.22	1.18	1.15
III Flexibility	11.03	10.24	9.59	1.15	1.07
IV Results	77.39	65.87	43.58	1.78	1.51
V Methods	15.01	14.93	12.26	1.22	1.22
VI Coordination	8.85	7.14	5.10	1.74	1.40
VII Cooperation	13.94	12.72	10.06	1.38	1.26
Mean superiority index				1.41	1.27
Composite superiority index				1.36	

TABLE XXXIX

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "PRACTICES USED ARE OBSERVED ON TOURS
TO FARMS OF CLASS MEMBERS"

Criterion	Number among 352 programs using the practice			Superiority index	
	138	108	106	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			(d)	(e)
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	6.26	5.77	5.20	1.20	1.11
III Flexibility	10.64	10.23	8.82	1.21	1.16
IV Results	62.69	61.17	37.63	1.66	1.62
V Methods	14.98	13.61	10.79	1.39	1.26
VI Coordination	7.50	5.76	4.90	1.53	1.18
VII Cooperation	13.29	10.89	9.10	1.46	1.20
Mean superiority index				1.41	1.26
Composite superiority index				1.36	

17. "Attendance records are analyzed to determine regularity of attendance and the type of farmers who are attending"

This practice outranks all others in the number of teachers who either ordinarily or occasionally use it. One would expect to see a higher relation of the practice to the criterion of "rural clientele served." Apparently the value of analyzing attendance records to determine regularity of attendance and the type of farmers attending is much more than a quantitative measure of a program. Elements of quality are brought into view by the relation the practice has to the criteria of "coordination," "results" and cooperation." Table XL discloses that the practice is good.

18. "Advisory committees assist in the evaluation of the program"

During the last decade there has been strong emphasis on the use of an advisory committee for program planning and evaluation. Hamlin and others are quoted on this fact in Chapter II of this thesis. The value of this practice might be questioned when only 21 per cent of the teachers in the study ordinarily used advisory committees for evaluation purposes. Certainly the practice has not been speedily adopted. However, the importance of the practice is emphasized by its highly significant composite superiority index shown in Table XLI. Apparently the advisory committees are not yet cognizant of factors that affect flexibility of opera-

TABLE XL

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "ATTENDANCE RECORDS ARE ANALYZED TO
DETERMINE REGULARITY OF ATTENDANCE AND THE TYPE OF FARMERS WHO ARE
ATTENDING"

Criterion	Number among 352 programs using the practice			Superiority index	
	257 Ordinarily or usually	57 Occasionally or sometimes	38 Seldom or never	a ÷ c	b ÷ c
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	5.87	5.81	5.10	1.15	1.14
III Flexibility	9.93	10.75	9.03	1.10	1.19
VI Results	55.96	58.30	36.74	1.52	1.59
V Methods	12.41	13.74	10.97	1.13	1.25
VI Coordination	6.23	5.96	3.86	1.61	1.54
VII Cooperation	12.06	10.57	7.89	1.53	1.34
Mean superiority index				1.34	1.34
Composite superiority index				1.34	

TABLE XLI

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "ADVISORY COMMITTEES ASSIST IN THE EVAL-
UATION OF THE PROGRAM"

Criterion	Number among 352 programs using the practice			Superiority index	
	75	70	207	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			a ÷ c	b ÷ c
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	7.17	5.78	5.26	1.36	1.10
III Flexibility	9.87	9.99	10.00	.99	1.00
IV Results	79.45	53.27	45.50	1.75	1.17
V Methods	14.83	14.30	12.36	1.20	1.16
VI Coordination	8.70	7.81	4.94	1.76	1.58
VII Cooperation	14.10	11.67	10.32	1.37	1.13
Mean superiority index				1.40	1.19
Composite superiority index					1.33

tion. In spite of the fact that the practice has little effect on the criterion of "flexibility" the practice does have merit in the development of a good program of adult education in vocational agriculture for it has a high relation to the remaining five criteria.

19. "Part of the last meeting of the course is used for evaluation"

Once again, elements of self evaluation are evidenced in a practice. Using part of the last meeting of a course for evaluation is popular with teachers and apparently popular with class members, as shown in Table XLII. The use of the practice yields less relation to the criterion "results" when the practice is ordinarily used than when it is occasionally used. When the practice, "part of the last meeting of the course is used for evaluation," is ordinarily used the program of adult education in vocational agriculture is of high quality as judged by the five remaining criteria.

20. "The instructor evaluates results of instruction as he visits the farm of class members"

This practice is closely related to practice number (16). In number (16) there could be a meaningful group evaluation, while in this practice the teacher alone does the evaluation. With the evidence for self evaluation in higher ranking practices, this practice of the instructor doing the evaluation on the farm may be

TABLE XLII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "PART OF THE LAST MEETING OF THE COURSE
IS USED FOR EVALUATION"

Criterion	Number among 352 programs using the practice			Superiority index	
	158 Ordinarily or usually	108 Occasionally or sometimes	86 Seldom or never	a ÷ c	b ÷ c
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	6.05	6.09	4.87	1.24	1.25
III Flexibility	10.34	10.13	9.10	1.14	1.11
IV Results	50.70	62.62	47.72	1.06	1.31
V Methods	13.21	13.35	10.93	1.21	1.22
VI Coordination	7.37	6.20	4.23	1.74	1.47
VII Cooperation	12.64	11.56	8.33	1.52	1.39
Mean superiority index				1.32	1.29
Composite superiority index					1.31

weak. Although the composite superiority index is not low for this practice it does rank in the lower ten practices in value. The main weakness lies in its relation to "flexibility" as shown in Table XLIII. The practice is good and apparently gives a great many instructors needed help in program building as shown by the fact that a great many teachers used the practice. This practice ranks second in degree of use by teachers in the study.

21. "Instruction is evaluated by analyzing check lists of approved practices planned and used"

Closely related to evaluation of results of teaching by the instructor as he visits the farm is the practice of evaluating instruction by analyzing approved practices planned and used. This is to be expected. However, practice number (21) in many cases could be used on the farms of class members. The practice does not indicate that the teacher alone makes the analysis. Table XLIV shows that the use of the practice "instruction is evaluated by analyzing check lists of approved practices planned and used" has the greatest relation to the three criteria of "coordination," "cooperation" and "results." The analysis shows that this practice rates consistently good.

TABLE XLIII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "THE INSTRUCTOR EVALUATES RESULTS OF IN-
STRUCTION AS HE VISITS THE FARMS OF THE CLASS MEMBERS"

Criterion	Number among 352 programs using the practice			Superiority index	
	249 Ordinarily or usually	79 Occasionally or sometimes	31 Seldom or never		
	Mean criterion scores for the practice			a ÷ c	b ÷ c
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	5.86	5.74	5.06	1.16	1.13
III Flexibility	9.92	10.46	9.79	1.01	1.07
IV Results	57.65	50.43	36.07	1.60	1.40
V Methods	13.86	12.45	10.83	1.28	1.15
VI Coordination	7.03	5.02	4.12	1.71	1.22
VII Cooperation	12.95	9.65	8.98	1.44	1.07
Mean superiority index				1.37	1.17
Composite superiority index				1.31	

TABLE XLIV

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "INSTRUCTION IS EVALUATED BY ANALYZING
CHECK LISTS OF APPROVED PRACTICES PLANNED AND USED"

Criterion	Number among 352 programs using the practice			Superiority index	
	144	97	111		
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			a ÷ c	b ÷ c
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	6.16	5.70	5.36	1.15	1.06
III Flexibility	10.42	10.66	8.78	1.19	1.21
IV Results	64.42	49.38	45.25	1.42	1.09
V Methods	14.38	13.66	11.53	1.25	1.18
VI Coordination	7.21	6.75	4.85	1.49	1.39
VII Cooperation	13.19	11.53	8.59	1.54	1.34
Mean superiority index				1.34	1.20
Composite superiority index				1.29	

22. "A list is made of the kind of evidence needed to indicate that objectives are being met"

This practice is part of a triad completed by adding to it practices number (7) and (11). Although the composite superiority index is high for each of the three practices, number (22) is decidedly below the other two in rank order of merit as shown by Table XLV. It is difficult to visualize using method and devices for collecting evidence that objectives are being met without first deciding on the kind of evidence needed. This mystery may be solved in part by the fact that nearly all of the teachers reporting in this study are also advisers for the local chapter of Future Farmers of America. Most chapters have a program of work and emphasis is given to ways and means which is similar to methods and devices. No mention is made of "kinds of evidence . . ." in the F.F.A. programs of work supervised by most teachers of agriculture. Consequently, there is a lack of effective use of the practice of listing the kind of evidence needed to indicate that objectives are being met. However, the practice is good as found in this study.

23. "Evaluation occurs at specific intervals throughout the year"

Table XLVI shows that the practice of evaluating a program

TABLE XLV

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "A LIST IS MADE OF THE KIND OF EVIDENCE
NEEDED TO INDICATE THAT OBJECTIVES ARE BEING MET"

Criterion	Number among 352 programs using the practice			Superiority index	
	86	141	125	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	6.29	5.78	5.42	1.16	1.07
III Flexibility	10.53	10.42	9.06	1.16	1.15
IV Results	66.29	62.29	36.71	1.80	1.70
V Methods	14.44	13.98	11.70	1.23	1.19
VI Coordination	5.90	6.51	5.17	1.14	1.26
VII Cooperation	11.48	11.76	9.24	1.24	1.27
Mean superiority index				1.29	1.27
Composite superiority index					1.28

TABLE XLVI

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "EVALUATION OCCURS AT SPECIFIC INTERVALS
THROUGHOUT THE YEAR"

Criterion	Number among 352 programs using the practice			Superiority index	
	104	103	145		
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			a ÷ c	b ÷ c
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	5.93	5.86	5.60	1.06	1.05
III Flexibility	10.50	9.91	9.61	1.09	1.03
IV Results	64.04	60.36	43.07	1.49	1.40
V Methods	14.97	13.91	12.03	1.24	1.16
VI Coordination	7.83	6.52	4.77	1.64	1.37
VII Cooperation	13.45	11.59	9.70	1.39	1.19
Mean superiority index				1.32	1.20
Composite superiority index					1.28

of adult education in vocational agriculture at specific intervals throughout the year is highly related to the criterion of "coordination." This fact is to be anticipated. The practice is good and reflects high quality in four of the criteria for a good program and low quality for the criteria of "rural clientele served" and "flexibility." The practice was used either ordinarily or occasionally by 59 per cent of the teachers reporting in the study. The analysis shows the practice to be good.

24. "Pictures of "before" and "after" situations are used"

This practice is not widely used, yet it does reflect high quality of program based on the six criteria. Apparently the use of pictures of "before" and "after" situations has value in the development and use of various types of cooperation needed to conduct a good program of adult education in vocational agriculture. The use of this practice also shows a desirable relation to the criterion of "results" as indicated in Table XLVII. The practice is good.

25. "Farmers and teacher agree on the value of an approved practice"

The agreement of farmers and the teacher on the value of an approved practice had wide use by the teachers reporting as revealed

TABLE XLVII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "PICTURES OF "BEFORE" AND "AFTER" SIT-
UATIONS ARE USED"

Criterion	Number among 352 programs using the practice			Superiority index	
	53	94	205	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	6.45	6.35	5.39	1.20	1.18
III Flexibility	10.96	10.71	9.37	1.17	1.14
IV Results	67.38	64.35	46.46	1.45	1.38
V Methods	13.37	14.41	12.37	1.08	1.16
VI Coordination	7.10	7.03	5.56	1.28	1.26
VII Cooperation	13.78	12.05	9.13	1.51	1.32
Mean superiority index				1.28	1.24
Composite superiority index					1.27

in Table XLVIII. The use of the practice indicates a high level of student-teacher cooperation, yet when compared to the other practices it is low in the rank order of merit. The practice is significantly good and highly related to "coordination" and "cooperation."

26. "Results of instruction with class members are compared with standards, averages, individual or other goals"

This practice does not have widely accepted use, yet Table XLIX shows that it has a strong relation to all criteria except "rural clientele served" and "flexibility". It does not have such a strong association with "results" as might be desired. The strongest relation is shown to "coordination" and "cooperation." The practice is good although low in the rank order of merit.

27. "Change in attitude of class members is noted"

This strictly qualitative evaluation of instruction is widely used and is good, although low on the list of merit when compared to the other 29 practices. Noting the change in attitude of class members has little relation to the criterion of "results." The strongest association is shown with the two criteria of "coordination" and "cooperation." One might expect that attitude would have a reasonably strong association with "cooperation." Even

TABLE XLVIII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "FARMERS AND TEACHER AGREE ON THE VALUE OF
AN APPROVED PRACTICE"

Criterion	Number of 352 programs using the practice			Superiority index	
	172	130	50	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	5.91	5.76	5.36	1.10	1.07
III Flexibility	10.86	9.32	9.58	1.13	.97
IV Results	61.67	45.29	53.62	1.15	.84
V Methods	14.12	12.53	12.17	1.16	1.03
VI Coordination	7.07	5.80	3.95	1.79	1.47
VII Cooperation	13.04	10.25	7.82	1.67	1.31
Mean superiority index				1.33	1.12
Composite superiority index				1.26	

TABLE XLIX

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "RESULTS OF INSTRUCTION WITH CLASS
MEMBERS ARE COMPARED WITH STANDARDS, AVERAGES,
INDIVIDUAL OR OTHER GOALS"

Criterion	Number of 352 programs using the practice			Superiority index	
	80	127	145	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	5.79	5.46	5.57	1.04	.98
III Flexibility	10.25	10.31	9.65	1.06	1.07
IV Results	62.36	54.35	50.11	1.24	1.08
V Methods	14.97	14.12	11.48	1.30	1.23
VI Coordination	7.56	7.27	4.88	1.55	1.49
VII Cooperation	13.37	12.30	9.26	1.44	1.33
Mean superiority index				1.27	1.20
Composite superiority index				1.25	

though the practice is low on the list a study of Table L reveals it to be significantly good.

28. "Production records of class members are used to indicate effectiveness of instruction"

Contrary to expectations, data in Table LI show that the use of production records of class members to indicate effectiveness of instruction has a negative association with "results" when the practice is ordinarily used. The value of the practice improves for getting "results" when occasionally used. There is little difference in either the usual or the occasional use of the practice in developing all phases of a superior program of adult education in vocational agriculture.

29. "Part of an on-farm meeting during the summer is used for evaluation"

The practice is closely related to practices number 16 and (20) and is of less value than either number (16) or (20). The practice is significantly good but it is not as valuable as the previously analyzed practices. The data in Table LII indicate that the quality of a program is good when the practice is used.

30. "A check of approved practices carried out is maintained on a chart"

Maintaining a check of approved practices carried out on a

TABLE I

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "CHANGE IN ATTITUDE OF CLASS MEMBERS
IS NOTED"

Criterion	Number among 352 programs using the practice			Superiority index	
	187	124	41	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	6.13	5.50	5.00	1.23	1.10
III Flexibility	10.11	10.11	8.89	1.14	1.14
IV Results	53.52	48.18	51.84	1.03	.93
V Methods	14.12	12.64	11.62	1.22	1.09
VI Coordination	7.10	5.58	3.90	1.82	1.43
VII Cooperation	12.32	10.37	9.37	1.31	1.11
Mean superiority index				1.29	1.13
Composite superiority index				1.24	

TABLE LI

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "PRODUCTION RECORDS OF CLASS MEMBERS ARE
USED TO INDICATE EFFECTIVENESS OF INSTRUCTION"

Criterion	Number among 352 programs using the practice			Superiority index	
	60	99	193	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice			(d)	(e)
	(a)	(b)	(c)	(d)	(e)
II Rural clientele served	5.97	6.01	5.60	1.07	1.07
III Flexibility	10.88	10.06	9.59	1.13	1.05
IV Results	39.42	56.01	43.62	.90	1.28
V Methods	14.29	14.01	12.58	1.14	1.11
VI Coordination	7.65	7.12	5.42	1.41	1.31
VII Cooperation	14.16	12.07	10.03	1.41	1.20
Mean superiority index				1.18	1.17
Composite superiority index				1.18	

TABLE LII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "PART OF AN ON-FARM MEETING DURING THE
SUMMER IS USED FOR EVALUATION"

Criterion	Number among 352 programs using the practice			Superiority index	
	45	95	212	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	6.17	6.03	5.56	1.11	1.08
III Flexibility	9.88	10.93	9.57	1.03	1.14
IV Results	60.69	56.97	48.92	1.24	1.16
V Methods	13.20	15.32	12.54	1.05	1.22
VI Coordination	6.99	7.74	5.31	1.32	1.46
VII Cooperation	11.54	13.70	10.14	1.14	1.35
Mean superiority index				1.15	1.24
Composite superiority index				1.18	

chart is the practice holding the lowest value in the rank order of merit. Although significantly good there are 29 other practices that will produce better results than this practice. Table LIII has data to indicate that the occasional use of the practice will produce a higher quality program than a more extensive use. Since this practice is closely related to practice number (21) the evidence seems to indicate that practice number (30) should be omitted from the recommended practices of evaluation.

Summary of the Analysis of the Evaluation Practices

All of the 30 practices analyzed were found to be worthwhile. Some are more valuable than others as shown in Table LIV. In the table only one of the first 15 practices deals with the evaluation of agricultural outcomes. The other 14 deal with educational outcomes for instruction. In the last 15 practices in the table there are six practices which deal largely with agricultural outcomes for instruction. This indicates that the teachers having stronger programs place major emphasis on developing behavior changes in people, which in turn will result in changes in farming.

Nearly all the practices involve some form of group evaluation. There were ten practices, numbers 3, 6, 9, 10, 12, 16, 18, 19, 25, and 29, that were primarily of a group nature. Five of

TABLE LIII

RELATION BETWEEN SIX MEAN CRITERION SCORES OF ADULT EDUCATION PROGRAMS
AND THE EVALUATION PRACTICE "A CHECK OF APPROVED PRACTICES CARRIED
OUT IS MAINTAINED ON A CHART"

Criterion	Number among 352 programs using the practice			Superiority index	
	48	56	248	a ÷ c	b ÷ c
	Ordinarily or usually	Occasionally or sometimes	Seldom or never		
	Mean criterion scores for the practice				
(a)	(b)	(c)	(d)	(e)	
II Rural clientele served	6.08	5.71	5.57	1.09	1.02
III Flexibility	11.46	11.08	9.75	1.18	1.14
IV Results	46.96	58.61	54.89	.86	1.07
V Methods	13.43	15.30	12.48	1.08	1.22
VI Coordination	6.13	7.97	6.03	1.02	1.32
VII Cooperation	12.67	12.89	10.45	1.21	1.23
Mean superiority index				1.07	1.17
Composite superiority index					1.10

TABLE LIV

RANK ORDER OF COMPOSITE SUPERIORITY INDICES FOR 30 EVALUATION
PRACTICES

Evaluation Practice	Superiority Index
1. Progress is compared with progress of other years and progress in other communities.	1.54
2. Cooperative activities developed are noted.	1.54
3. Business men assist in the evaluation of the program.	1.53
4. Leadership development is noted.	1.49
5. Cooperative organizations formed are noted.	1.46
6. Other agricultural agencies assist in the evaluation of the program.	1.43
7. A list is made of the methods and devices to use in collecting evidence which will reveal that objectives are being met.	1.42
8. Systematic study of the community is made to discover changes in farming due to instruction.	1.41
9. Class members assist in the evaluation of the results of instruction.	1.41
10. Part of a special field day is devoted to evaluation.	1.41
11. Clearly stated objectives are used to form the basis for evaluation.	1.39
12. Other teachers in the school, administrators, school board members, state supervisory staff and college or university education staff help evaluate the program.	1.37
13. Plans and action are based on the analysis and interpretation of the results of evaluation.	1.37
14. Enrollment records are analyzed to determine the extent to which the program serves all who want, need or can use adult education.	1.36
15. Results of instruction with class members are compared with the economic and social achievement of non-class members.	1.36
16. Practices used are observed on tours to farms of class members.	1.36

17. Attendance records are analyzed to determine regularity of attendance and the type of farmers who are attending. 1.34
 18. Advisory committees assist in the evaluation of the program. 1.33
 19. Part of the last meeting of the course is used for evaluation. 1.31
 20. The instructor evaluates results of instruction as he visits the farms of class members. 1.31
 21. Instruction is evaluated by analyzing check lists of approved practices planned and used. 1.29
 22. A list is made of the kind of evidence needed to indicate that objectives are being met. 1.28
 23. Evaluation occurs at specific intervals throughout the year. 1.28
 24. Pictures of "before" and "after" situations are used. 1.27
 25. Farmers and teacher agree on the value of an approved practice. 1.26
 26. Results of instruction with class members are compared with standards, averages, individual or other goals. 1.25
 27. Change in attitude of class members is noted. 1.24
 28. Production records of class members are used to indicate effectiveness of instruction. 1.18
 29. Part of an on-farm meeting during the summer is used for evaluation. 1.18
 30. A check of approved practices carried out is maintained on a chart. 1.10
-

these ten practices appear in the first 12 of the practices listed in Table LIV. The others are scattered through the remainder of the table. This indicates that neither the teacher alone nor the student alone nor any particular person can effectively evaluate a program of adult education in vocational agriculture.

The summary of findings, conclusions, recommendations and implications for use of the 30 evaluation practices appear in the next chapter.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The final part of this study summarizes the method and findings, and provides certain conclusions, recommendations and implications. This interpretation necessarily reveals the investigator's philosophy and experience.

Method

The major purpose of this study was to discover and to appraise practices used in evaluating local programs of adult education in vocational agriculture. A contributory purpose called for the establishment of criteria for a good program of adult education in vocational agriculture. A review of literature provided the basis for the initial statement of ten criteria and the accompanying assumptions for a good program of adult education in vocational agriculture. Twenty leaders in agricultural education and/or in adult education evaluated the criterion statements and assumptions, found them acceptable and added none. Measures for each of the ten criteria and a list of 30 evaluation practices drawn from the literature were sent to 505 experienced teachers of agriculture for adults in nine north-central states. Returns

totaled 362 or 70.7 per cent, of which 352 were usable. Six of the ten criteria were proven valid on the basis of Pearson correlations of all scores for each criterion measure provided in each of the 352 programs. The establishment of the relation between each evaluation practice and each of the six criteria found to be valid determined the worth of the 30 evaluation practices. The combining of the results of this item analysis formed a superiority index for each practice. The evaluation practices were ranked in order of merit on the basis of the superiority index. All 30 evaluation practices were found to be positively related to good programs based on the six criteria.

Summary of the Findings, Conclusions and Recommendations Dealing
With the Criteria

Ten criteria for a good program of adult education in vocational agriculture were studied. The names for the ten criteria were:

- | | |
|-----------------------------|------------------------------|
| 1. Relative size of program | 6. Coordination |
| 2. Rural clientele served | 7. Cooperation |
| 3. Flexibility | 8. Activities materializing |
| 4. Results | 9. Maintenance of activity |
| 5. Methods | 10. Percentage of attendance |

Six of the ten criteria were found to be valid measures for a good program of adult education in vocational agriculture. These six retained for use in analyzing the value of 30 evaluation practices were:

- | | |
|---------------------------|-----------------|
| 1. Rural clientele served | 4. Methods |
| 2. Flexibility | 5. Coordination |
| 3. Results | 6. Cooperation |

Even though only six of the criteria were used in the analysis of the evaluation practices a summary of the findings, conclusions and recommendations for each of the ten is desirable.

1. "Relative Size of Program"

Findings

The relative size of the adult education program in vocational agriculture was not proven to be related to the quality of the program. There was a large grouping of the scores for this criterion at the low end of the frequency distribution of scores.

Conclusions

The criterion "relative size of program" is not as good as other criteria in appraising adult education in vocational agriculture. However, the lack of validity of this criterion found in this study does not negate the importance attached

to this criterion by teachers, school administrators and others who pay for the program. Since systematic instruction with small groups is emphasized in adult education in vocational agriculture, a different measure for "relative size of program" probably should be developed. The skewed distribution of the criterion scores also emphasizes this need.

Recommendations

Since the criterion "relative size of program" was not found to be significantly related to other criteria, teachers of adult classes in vocational agriculture should consider other bases for evaluation.

2. "Rural Clientele Served"

Findings

The criterion "rural clientele served" was found to be valid and was more highly related to "methods" than to any other criterion.

Conclusions

Teachers of vocational agriculture apparently are cognizant of rural population groups and are devising ways and means of meeting the needs of these people.

Recommendations

Teachers of vocational agriculture should continue to

examine the needs of each and every rural clientele group in the community. When formulating the bases for evaluating programs of adult education in vocational agriculture, persons responsible for evaluation should be cognizant of the rural groups.

3. "Flexibility"

Findings

The criterion of "flexibility" was found to be valid. The highest relation of any pair of criteria in the study existed between "flexibility" and "percentage of attendance". A positive and strong relation occurred between "flexibility" and "methods." "Cooperation" and "rural clientele served" were also highly related.

Conclusions

The study shows what leaders in the field have stressed for a number of years, namely: it is important to provide systematic instruction on a flexible basis which will meet the needs of class participants.

Recommendations

Programs of adult education in vocational agriculture should be provided at a time of day, week and year and at a place which will more fully meet the needs of farm people.

The criterion of "flexibility" should be considered when the bases for evaluating programs of adult education in vocational agriculture are formulated.

4. "Results"

Findings

In this study "results" was found to be valid and related to "rural clientele served", to "cooperation" and to "coordination." There was a peculiar distribution of scores on "results." About one-eighth of the scores were extremely high, while the remainder formed a more normal distribution.

Conclusions

The criterion "results" forms a sound basis for evaluation. "Results", however, are difficult to measure; the respondents' methods of counting or defining approved practices seem to differ greatly and it is difficult to separate results due to instruction from other factors.

Recommendation

Persons responsible for evaluation should consider the criterion "results" when formulating the bases for evaluating programs of adult education in vocational agriculture.

5. "Methods"

Findings

The criterion "methods" was found to be valid. Respondents used a wide range of methods. This criterion was one of the more highly dependent criteria. It was related to "coordination," "cooperation", "results", "rural clientele served" and "flexibility."

Conclusions

The use of good methods is one of the essentials for a good program of adult education in vocational agriculture. The use of many methods seems to be related to quality in other phases of the program.

Recommendations

When instructing adult farmers, teachers of vocational agriculture should use a variety of good methods adapted to local requirements. Evaluators should consider the criterion "methods" when formulating bases for evaluating a program of adult education in vocational agriculture.

6. "Coordination"

Findings

Although this criterion was looked upon with most disfavor by the judges, it rated high when correlated with

other criteria in the study. "Coordination" correlated highest with "cooperation."

Conclusion

Programs of adult education in vocational agriculture need to be coordinated with other adult education activities within the school and community.

Recommendations

Teachers of vocational agriculture and local school administrators should consider and plan for good coordination of the program of adult education in vocational agriculture. Those responsible for evaluation should consider the criterion "coordination" when formulating bases for evaluating programs of adult education in vocational agriculture.

7. "Cooperation"

Findings

All criteria were positively related to "cooperation" except "relative size of program" and "activities materializing". There was a slight grouping of "cooperation" scores at the upper end of the distribution.

Conclusions

Personnel responsible for programs of adult education in vocational agriculture need to cooperate with other adult education workers if a high quality program of adult

education in vocational agriculture is to be provided.

Recommendations

Teachers of vocational agriculture must take the lead in the local community by cooperating with other personnel in the school and community who are responsible for adult education activities. The consideration of the criterion "cooperation" is important in the formulation of bases for evaluation of programs of adult education in vocational agriculture.

8. "Activities Materializing"

Findings

This criterion had the lowest mean correlation coefficient of the ten criteria. Since the mean correlation was considerably below the 95 per cent level of significance, the criterion was not considered valid even though most of the schools reporting had 100 per cent of their activities materializing.

Conclusions

Either the original assumption that activities will materialize if they are based on education needs and interests of farm people and if they are adequately planned, announced and executed is not valid or there are factors in the study

which cause a poor relation between the criterion of activities materializing and the other criteria.

Recommendations

Since "activities materializing" was not found to be valid in this study, teachers should consider the use of other criteria in formulating the bases for evaluating programs of adult education in vocational agriculture. Teachers in superior programs should consider plans for new and innovating activities with the idea that not all activities will or should materialize.

9. "Maintenance of Activity"

Findings

This criterion bore no consistent dependent relation to the other nine criteria. It did show some dependent relation to "cooperation", "percentage of attendance" and "relative size of program."

Conclusions

Apparently either certain factors prevent the development of a clear-cut relation of this criterion to other criteria, or the assumption is not valid that properly conducted activities based on the educational needs and interests recognized

by farm people would cause people to attend throughout the period planned.

Recommendations

Since "maintenance of activity" was not found to be valid in this study, teachers should consider the use of other criteria in formulating the bases for evaluating programs of adult education in vocational agriculture.

10. "Percentage of Attendance"

Findings

This criterion was in the middle ground of no relation, either positive or negative, to the other criteria. "Percentage of attendance" showed a high relation to "flexibility" moderate relation to "coordination," to "cooperation" and to "maintenance of activity," and a high negative relation to "relative size of program." The schools reporting had a wide range of percentage of attendance.

Conclusions

People will attend adult education classes more regularly when classes are conducted at convenient times and places. Likewise when a program is well coordinated and conducted in cooperation with other groups and agencies there is likely to be a good percentage of attendance throughout the period

planned. Larger numbers of people enrolled may mean a lower percentage of attendance. However, the criterion "percentage of attendance" is not sufficiently related to the other criteria to be considered valid. Either the assumption that percentage of attendance is a valid basis for evaluation is incorrect or contaminating factors clouded the analysis.

Recommendations

Since "percentage of attendance" was found not to be significantly related to other criteria in this study, teachers of adult farmers in vocational agriculture should consider the use of other bases for evaluation.

Teachers of vocational agriculture, local administrators, state supervisors, teacher educators and others concerned with adult education in vocational agriculture should minimize program evaluation based on such criteria as "relative size of program", "percentage of attendance," "activities materializing" and "maintenance of activities." Acceptable criteria for evaluation include "rural clientele served," "flexibility," "results," "methods," "coordination" and "cooperation."

Summary of the Findings, Conclusions and Recommendations Dealing
With the Evaluation Practices

1. Finding

Three of the 30 evaluation practices in the study point out the relation between evaluation and instructional planning and teaching. These practices are:

- a. A list is made of the methods and devices to use in collecting evidence which will reveal that objectives are being met.
- b. Class members assist in the evaluation of results of instruction.
- c. Plans and action are based on the analysis and interpretation of the results of evaluation.

The better programs of adult education use evaluation practices which are associated with instructional planning and teaching.

Conclusions

Evaluation in adult education in vocational agriculture is a part of instructional planning and teaching. The use of acceptable practices of evaluation improves instructional planning and teaching.

Recommendations

Teachers should provide for evaluation when they plan instruction. Plans for evaluation should be carried out.

2. Finding

In the first nine evaluation practices as shown in Table LIV it may be noted that at least three require the assistance of persons other than the teacher of vocational agriculture in making evaluations. The three practices are:

- a. Business men assist in evaluation of the program.
- b. Other agricultural agencies assist in the evaluation of the program.
- c. Class members assist in the evaluation of the results of instruction.

Six of the 30 evaluation practices are based wholly on the use of class participants. Twenty-two of the other practices involve or could involve some student participation in evaluation. Five of the ten practices that are essentially group evaluation are found in the first 12 of the 30 evaluation practices placed in the rank order of merit.

Conclusions

Many individuals are required to make effective evaluations of the better programs of adult education in vocational agriculture.

Recommendations

Persons other than the teacher of vocational agriculture should assist in evaluation. The teacher is only one of several evaluators. The conception that one person can evaluate adequately a program of adult education in vocational agriculture is erroneous. To be effective, evaluation must be a group undertaking.

Adequate use should be made of class participants in evaluation. People from outside the community should be used to evaluate local programs of vocational agriculture. State supervisors and teacher educators in vocational agriculture and other fields of education can assist in evaluation and help implement evaluation practices. These individuals may be able to supply stimulating points of view to the evaluation which would increase the objectivity of the evaluation.

Other people in the community who are not class participants should also help evaluate adult education in vocational agriculture.

3. Finding

None of the 30 evaluation practices eliminates the use or the possible use of the class members with or without the help of the teacher in the evaluation program. This is self evaluation. The practice "class members assist in the evaluation of the results

of instruction" is more of a self evaluation practice than is the practice "business men assist in the evaluation of the program." Only three of the latter type appear in the 30 practices.

Conclusions

Self evaluation by the class members or with the help of the teacher is effective in evaluation and should be clearly recognized as an important part of evaluation.

Recommendations

The teacher and local school administrators should assume leadership in providing for effective self-evaluation in local adult education programs in vocational agriculture.

4. Finding

Only six of the 30 evaluation practices deal largely with agricultural results of instruction. However, the importance of such practices should not be ignored. For instance, use of practice number 8, "systematic study of the community is made to discover changes in farming due to instruction," can provide very worthwhile information on the quality of instruction. Practices numbered 21, 24, 26, 28, 29 and 30 are important in providing specific types of evaluative information. Twenty-four evaluation practices dealing with educational outcomes of instruction attest to the importance of measuring such outcomes.

Conclusions

It can be concluded from the above findings that both educational and agricultural results of instruction are important. Of the two types of results the educational outcomes are more important than agricultural results because more of the evaluation practices dealing with educational results appear in the upper portion of the rank order listing of the 30 practices.

Recommendation

Primary importance should be given to evaluation of educational outcomes of instruction, and secondary importance should be given to evaluation of agricultural outcomes in adult education in vocational agriculture. Stressing the development of behavior changes in people will bring about changes in farming.

5. Finding

All of the 30 evaluation practices analyzed were found to be good. The practices are listed in rank order of merit in Table LIV. The fact that some closely associated practices such as numbers 7, 11 and 22 are not listed closely to each other in the table indicates that the rank-order of listing does not mean that practices used in order of listing will produce results in the same rank order. The low relation found between the valid

criteria may have caused closely related practices to be scattered through the rank order list. The differing ability of the respondents using the practice may have caused the variation.

Conclusion

Since closely related practices are scattered through the rank order list, judgment must be used in selecting and implementing each of the 30 practices or any combination of the practices. Moreover, a person's skill in using the practice may be more important than the value of the practice. However, those persons concerned with evaluation of adult education in vocational agriculture should become familiar with the 30 evaluation practices.

Recommendation

The following persons should become familiar with the 30 evaluation practices: teachers of vocational agriculture, farmers, members of local advisory councils, local school-board members, local school administrators, state supervisory staff members in vocational agriculture and teacher-education personnel. These people should either use or recommend for use the more valuable practices of evaluation if maximum progress is to be achieved in adult education in vocational agriculture.

Persons associated with and concerned about programs of adult education in vocational agriculture are responsible for using

evaluation practices that are sufficiently varied to fit local conditions.

Implications of the Evaluation Practices for the Teacher
of Vocational Agriculture

This section will deal with the implications of each of the 30 evaluation practices for the teacher of vocational agriculture. Since responsibility for the evaluation program will fall chiefly on the teacher, the practices will be listed in the rank order of merit with the most valuable practice listed first.

1. "Progress is compared with progress of other years and progress in other communities."

This is one of the practices that shared first place in the rank order of merit for the 30 practices. The implications for the practice are many. In an adult education program in vocational agriculture teachers may desire to keep accurate records of accomplishment which can be compared with similar records kept from year to year by the local department and with comparable records kept in other communities. Other good evaluation practices which are presented in this section may be used also in determining progress of the local program. Such practices as those which in-

volve class members, other local people and people from outside the community in evaluation of progress may be very beneficial.

2. "Cooperative activities developed are noted."

The very high rating of this practice may be associated with the emphasis that many teachers of vocational agriculture and people in agriculture put on cooperative activities. Cooperative activities are recommended in the objectives for vocational education in agriculture.¹ The results of teaching cooperation may be reflected in youth and adult work in vocational agriculture. The use of this practice, "cooperative activities developed are noted," apparently influences strongly the quality of the adult education program in vocational agriculture.

Teachers of vocational agriculture should remain cognizant of cooperative activities developed at the adult level. These activities might include the cooperative buying of livestock, seed, fertilizer, farm equipment and supplies. Other cooperative activities might include cooperative use of farm machinery, cooperative harvesting of crops and cooperating to promote social and economic benefits for people in the community.

¹Educational Objectives in Vocational Agriculture. Vocational Division Monograph No. 21, U. S. Office of Education Bulletin, 1940, Washington, D. C.: Government Printing Office, P. 1.

3. "Business men assist in the evaluation of the program."

The high rating of this practice indicates the value of using local people in the evaluation process who are not directly associated with the program of adult education in vocational agriculture. Local business people should be used. This can be accomplished by including them in the advisory council (practice number 18) which is also recommended for use in evaluating a local program of adult education in vocational agriculture. Other techniques may include the use of business men on planning committees and/or as special teachers which would enable them to evaluate from a different point of view.

4. "Leadership development is noted."

Many teachers of adult farmers have relied on the use of local leaders in developing the local program. This study shows that noting leadership development markedly benefits the quality of the adult education programs in vocational agriculture. Teachers should continue to be aware of leadership development in all phases of the agricultural community.

5. "Cooperative organizations formed are noted."

This evaluation practice is closely related to practice number (2). Noting the formation of cooperative organizations

denotes a higher level of cooperation than noting cooperative activities carried out. Since both evaluation practices rated high, preference should be given to noting the cooperative organizations formed. If cooperative organizations are functioning properly people should engage more readily in cooperative activities than when no cooperative organizations exist.

Cooperative organizations such as artificial breeding associations, livestock and crop purchasing and marketing associations, insurance and fire protection associations are examples of cooperative associations that teachers of agriculture help to develop.

6. "Other agricultural agencies assist in the evaluation of the program."

The use of other agricultural agencies in evaluating the program of adult education in vocational agriculture is an indicator of cooperation found to be related to high quality programs of adult education in vocational agriculture. Other agricultural agencies can assist in evaluation and thereby promote good inter-program coordination and cooperation. Needed technical information can also be secured through good working relationships with other agricultural agencies.

7. "A list is made of the methods and devices to use in collecting evidence which will reveal that objectives are being met."

This evaluation practice need not be an academic procedure. Local adult-farmer class members should help choose methods and devices for collecting evidence which will reveal that objectives are being met. This activity may be crucial in many communities where teachers and administrators use different methods and devices than do farmers in collecting evidence that objectives are being met. A "meeting of the minds" can be achieved by using the above practice.

8. "Systematic study of the community is made to discover changes in farming due to instruction."

This practice denotes the use of formal methods of evaluation. The task of making such a study can be large and difficult. Here consultants from outside the community may help in setting up and conducting the study. Admitting that it is difficult to separate the results of instruction in vocational agriculture from other factors that affect results, the practice of making a systematic study is still recommended. It rates sufficiently high to warrant consideration as one of the more important practices to use. Persons responsible for evaluation must judiciously decide on the frequency for systematic study.

9. "Class members assist in the evaluation of the results of instruction."

Class members may assist at any time in evaluation of instruction. Such evaluation may occur formally or informally both in the classroom and on the farm. The total class, a small group, or individual class members may assist with the evaluation. The only limitations to the use of such a practice will be the limitation of the imagination of the teacher or the limitation of his ability to use many methods of evaluation. The practice of using class members to assist in the evaluation of results of instruction is highly recommended because of its high place in the rank order of merit and its great flexibility.

10. "Part of a special field day is devoted to evaluation."

This practice is closely related to the preceding practice. Field situations for observing results of instruction provide an informal atmosphere highly desired by farm people. The field day could include demonstrations on the operation of farm equipment, on proper tillage, seeding and harvesting operations, on farm construction methods, on livestock raising, sanitation and disease control, on landscaping or other farm problems.

11. "Clearly stated objectives are used to form the basis for evaluation."

This practice is one of the starting points for good evaluation. For example, in practice number (1), if objectives were not used it would be difficult to make progress comparisons. A decision has to be made regarding the specific phases of education or agriculture that are to be evaluated, such as the farm management, crops raising, livestock raising, farm mechanics, leadership development or other phases of farming. Objectives for these phases must be established and suitable methods determined for measuring progress toward the objectives.

12. "Other teachers in the school, administrators, school board members, state supervisory staff and college or university education staff help evaluate the program."

The use of this practice implies that using ideas, methods and objectivity from outside the local program of vocational agriculture is helpful in the evaluation program. Professional people from outside the community usually have broad experience and have the ability to provide worthwhile suggestions for improvement of local evaluation. The influence of outside people is stimulating. Local people not in the program of vocational agriculture are also

valuable for the different viewpoints they can provide for evaluation. Local school people and professional workers in education from outside the community should work together to create greater mutual understanding. Continued use should be made of other teachers in the school, administrators, school board members, state supervisory staff and college or university education staff in the evaluation of local adult education programs in vocational agriculture.

13. "Plans and action are based on the analysis and interpretation of the results of evaluation."

Good evaluation involves the establishment of immediate and long-time adjustments in the program based on earlier secured evidence. If an established goal or objective is not achieved, evaluation should provide some clue for the difficulty. For example, if the goal for a certain year is the establishment of six neighborhood discussion groups in adult education in vocational agriculture and only four become active, good evaluation should provide some evidence for lack of full accomplishment as well as evidence for future plans.

14. "Enrollment records are analyzed to determine the extent to which the program serves all who want, need or can use adult education."

Teachers of vocational agriculture should study the population composition of the community and make a cross check between groups present and groups being served. Just the simple fact of age distribution of farmers may provide the basis for developing a program that meets the needs of a group that is being overlooked. Identifying the wants and needs of farm people can become a complex problem. There are good methods to use for the accurate identification of wants and needs. The study and use of these methods by teachers seems desirable.

15. "Results of instruction with class members are compared with economic and social achievement of non-class members."

Although often difficult to measure, results of instruction are important in evaluation. Certain visual changes in crop and livestock production, care and repair of home grounds, buildings, machinery and equipment may be measured without great difficulty. Less obvious changes may create problems for evaluation. The use of outside resource people may help develop adequate use of the practice.

16. "Practices used are observed on tours to farms of class members."

This practice implies that people in addition to the teacher and class members are present at each farm to observe farming prac-

tices. The farmer on the tour can compare his farming with the farming of other class members. Skill is needed by the teacher to help farmers analyze good agricultural practices without embarrassment to anyone, which might lead to alienation. The tours can occur at any time of the year and can be arranged to study any farm problem or activity.

17. "Attendance records are analyzed to determine regularity of attendance and the type of farmers who are attending."

Some attention should be given to regularity of attendance. This factor may not be critical in a good program of adult education in vocational agriculture since there appears to be no relation between the percentage of attendance and other criteria for a good program as found in the analysis of the criteria in this study. It may be desirable that perfect attendance should be the aim for class participants, if systematic instruction is provided. However, as the programs are now conducted, all class members may not need the learning involved in every lesson. Possibly lessons are not closely related or farmers need only certain parts of a course to fulfill felt needs. Apparently the significance of the practice lies in studying the attendance records to determine the type of farmers who is attending class. This point is emphasized in the

analysis of practice number (14). Apparently the matter of recognizing and serving all segments of the rural population is significant for the maintenance of a good adult education program in vocational agriculture.

18. "Advisory committees assist in the evaluation of the program."

The use of advisory committees is related to other practices such as number (3) where business men assist in the evaluation of the program. The use of committees can be a time saver compared to the use of individuals for evaluation. The techniques for using such committees can be simple or complex. For example, a committee from a class can help plan instruction, social activities for the class or an achievement program. On the other hand, a larger committee or council representing the whole community can aid in planning a comprehensive program of adult education in vocational agriculture. Persons desiring further information on the use of advisory committees are referred to a study of the literature in the field.

19. "Part of the last meeting of the course is used for evaluation."

This practice implies that participants in learning activities are competent judges of the value of their experience. The practice can be simple or complex according to the wishes of the

teacher and the class members. The use of informal comments on various phases of the class activities, check lists, rating scales or written evaluative statements all have a place in the last meeting of the course. In certain cases it may be inadvisable to wait until the last meeting for an evaluation. A current check-up on instruction may be valuable for planning and conducting succeeding learning activities.

20. "The instructor evaluates results of instruction as he visits the farms of class members."

Two values may come from using this practice. Firstly, the teacher may determine weaknesses in his instruction and secondly, the farmer may detect inadequacies in the application of supposed learning. The alert teacher would probably draw the farmer into the evaluation of results of instruction. Some method for keeping a record of changes proposed by the farmer may be helpful. Approved practice lists developed by the class and used by the members, or an accumulative record kept up to date by the farmer and the teacher, might be helpful in making appraisal of instruction on the farm.

21. "Instruction is evaluated by analyzing check lists of approved practices planned and used."

The analysis of approved practices planned and used can occur on an individual basis with each farmer or can be made of all approved practices planned and used by one class or several classes. Mobley found that approved practices planned was not a satisfactory method of evaluation.² The present study certainly substantiates the analysis of the use of the approved practices. The analysis of approved practices planned and used should show the instructor how completely class members carried out earlier intentions.

22. "A list is made of the kind of evidence needed to indicate that objectives are being met."

This practice will be of greatest value if used with practices numbered (7) and (11). Kinds of evidence needed in evaluation may include approved practices and skills appropriate for the situation, productive efficiency records, accumulated data which reveal accomplishments in terms of goals set, annual profits, increased net worth, improvement in farming status, home and grounds improvement, elected and appointed leadership positions held in the community by class members and cooperative buying and selling activi-

²M. D. Mobley, "An Evaluation of Evening Class Instruction in Terms of Changed Practices." Unpublished Master's Thesis, Library, Cornell University, Ithaca, New York, 1930, 155 pp. (From Summaries of Studies in Agricultural Education. Vocational Division Bulletin No. 180, Federal Security Agency, Washington, D. C.: Government Printing Office, P. 127.)

ties. Judgment and experience is necessary in selecting the proper evidence to indicate that an objective is being met.

23. "Evaluation occurs at specific intervals throughout the year."

Evaluating results of instruction at specific intervals throughout the year gives support to the need for more than once-a-year evaluation. The specific intervals may be regular or irregular in length, or may occur at significant periods such as at the beginning, middle or close of a series of class meetings or activities.

24. "Pictures of "before" and "after" situations are used."

This practice gives added support to other practices used to evaluate results of instruction. Colored transparencies, moving pictures and black-and-white pictures may be taken by the instructor or the class members to show specific or general changes accomplished through instruction.

25. "Farmers and Teacher agree on the value of an approved practice."

The agreement of the value of an approved practice may occur during the teaching period, or on the farm of a class member before, during or following class instruction. Advisory committees and

councils may also help determine the value of an approved practice.

26. "Results of instruction with class members are compared with standards, averages, individual or other goals."

This practice can be used either for group or for individual evaluation purposes. The measures are objective and not difficult to apply. Such measures include comparison of individual income and production records with farm management reports published by the land grant colleges. Crop and livestock production records of the individual may be compared with individual or group goals, or state or national averages. Quality of crop and livestock products may be compared with the legal standards, or standards established by the individual or group.

27. "Change in attitude of class members is noted."

Before a change in a farming practice can occur there must be a change in the attitude of the farmer. Teachers who are skillful in detecting attitude change can determine receptiveness for instruction. Attitude change may be detected by observing the farmer in class, in on-farm learning activities or in other learning situations.

28. "Production records of class members are used to indicate effectiveness of instruction."

This practice is closely related to practice number (26). Practice number (26) probably ranks higher because there is involvement of the class member in the educational process of establishing a goal. Practice number (26) could include other than production factors. The use of production records to indicate effectiveness of instruction is an objective approach. In many cases production records are relatively easy to obtain. The use of production records for evaluation should be encouraged.

29. "Part of an on-farm meeting during the summer is used for evaluation."

If conditions are suitable to use an on-farm meeting during the summer for evaluation the teacher should use the situation. Otherwise the use of practices number (16) and (20) will yield higher results in terms of an effective program. Two superior practices of a similar nature are "practices used are observed on tours to farms of class members" and "the instructor evaluates the results of instruction as he visits the farm of class members." The practice of using part of an on-farm meeting during the summer for evaluation might have ranked higher if more than one time of the year had been indicated for the evaluation.

30. "A check of approved practices carried out is maintained on a chart."

This practice is acceptable though weaker than the 29 other evaluation practices. Practice number (21), "instruction is evaluated by analyzing approved practices planned and used" is superior to number (30) and is recommended for use rather than number (30). Maintaining a check of approved practices carried out on a chart could be a part of the more valuable practice of making an analysis of practices planned and used.

Twenty-nine of the thirty evaluation practices studied are recommended for use in local communities where people desire superior programs of adult education in vocational agriculture. Judgment should be used in making application of the practices. Practices high on the rank-order-of-merit list should be considered first.

Suggestions for Further Research

The discovery of 29 good evaluation practices has revealed the need for determining the best methods to use in implementing each practice. Most of the 29 evaluation practices will be initiated by teachers of vocational agriculture. Recommendations for use of the practices should be oriented toward this group of teachers.

An investigation could be done on the practices that state supervisors and teacher education personnel in vocational agriculture use to evaluate local programs of adult education. There may be discrepancies between the evaluation practices and criteria found to be good in this study and the evaluation practices and criteria used by the above two groups.

Further study is needed on the criteria for a good program of adult education in vocational agriculture. The findings on the criteria in this study were very similar to the findings of Kempfer in a like study in general adult education. This provides strong support for the need for further research which will explain why a difference exists between the opinions of the judges and the statistical findings on the criteria.

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APPENDIX

APPENDIX

- A. Judges of the Criteria
- B. Request to the Judges
- C. Judges' Acceptance Card
- D. Cover Letter to the Judges Accompanying the Criteria and Assumptions
- E. Judges' Score Sheet for Criteria
- F. Questionnaire - A Study of Evaluation in Adult Education in Vocational Agriculture
- G. Cover Letter for Questionnaire
- H. First Follow-up Card
- I. Second Follow-up Card

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Lafayette, Indiana
5. C. E. Bundy, Assistant Teacher Trainer
Vocational Education Department
Iowa State College
Ames, Iowa
6. Harry W. Kitts, Assistant Teacher Trainer
Agricultural Education Department
University of Minnesota, University Farm
St. Paul 8, Minnesota
7. G. F. Ekstrom, Head Teacher Trainer
Agricultural Education Department
University of Missouri
Columbia, Missouri
8. C. C. Scarborough, Head Teacher Trainer
State Agricultural College
State College Station
Raleigh, North Carolina

9. Harry Nesman, Chief
Agricultural Education Division
Department of Public Instruction
Lansing, Michigan
10. L. M. Sasman, Chief
Agricultural Education Division
Department of Public Instruction
Madison, Wisconsin
11. R. M. Clark, Teacher Trainer
Department of Agricultural Education
Michigan State College
East Lansing, Michigan
12. R. E. Naugher
Agricultural Education Specialist
U. S. Office of Education
Federal Security Agency
Washington, D. C.
13. Elmer Lightfoot
Agricultural Education Division
Department of Public Instruction
Lansing, Michigan
14. Homer Kempfer
Specialist in Adult Education
U. S. Office of Education
Federal Security Agency
Washington, D. C.
15. Malcolm Knowles
Project Director, Adult Leadership
743 N. Wabash
Chicago, Illinois
16. John Holden
Continuing Education Service
Michigan State College
East Lansing, Michigan

17. Howard McClusky
School of Education
University of Michigan
Ann Arbor, Michigan
18. Robert Sharer
Continuing Education Service
Michigan State College
East Lansing, Michigan
19. H. M. Byram, Head
Agricultural Education Department
Michigan State College
East Lansing, Michigan
20. Ralph Bender, Head Teacher Trainer
Department of Agricultural Education
The Ohio State University
Columbus, Ohio

B

REQUEST TO THE JUDGES

Olivet, Michigan

July 7, 1952

Dear _____.

Under the guidance of H. M. Byram, head of vocational education at Michigan State College, I am making a study of evaluation in adult education in vocational agriculture. Part of the study calls for establishment of criteria in this phase of agricultural education.

Your name has been suggested as one whose judgment will be helpful in this endeavor. If a three-page list of criteria and assumptions were mailed to you, would you be willing to express your opinion on the validity of the criteria? Your assistance in judging the criteria would be of great value. A post card is enclosed for your reply.

Sincerely yours,

Walter Schroeder

Director of Adult Education

C

JUDGES' ACCEPTANCE CARD

I will act as a judge of the list of
criteria. _____

It will be impossible for me to act as
a judge. _____

Name _____

D

COVER LETTER TO THE JUDGES ACCOMPANYING THE CRITERIA AND
ASSUMPTIONS

Olivet, Michigan

July 11, 1952

Dear _____,

Thank you for consenting to judge criteria for adult education in vocational agriculture. Any recommended revisions based on your experience will be appreciated.

It is my plan to intercorrelate scores of criterion measures from about 200 programs. This should provide more evidence of the validity of each criterion. By a statistical process the responses to 30 practices used in evaluation in adult education in vocational agriculture will be measured against criterion scores. Through this method, practices used in schools with superior programs can be weighed against practices used in schools with inferior programs. Finally, reliable practices used in evaluation of adult education in vocational agriculture should be ready for release.

Your judgment on the enclosed criteria and assumptions will be of value in this study.

Directions for recording your opinion appear on the score sheet.

Sincerely yours,

Walter Schroeder
Director of Adult Education

E

JUDGES SCORE SHEET FOR CRITERIA

Directions: To record your opinion, place an X in the appropriate spaces after either choice which appears under the name of the criterion. If you wish to qualify your opinion or make any statement please write in the space for comments, on the back of this sheet or on the page where the criterion appears.

I. SIZE

Agree _____ Disagree _____

Comments:

II. CLIENTELE SERVED

Agree _____ Disagree _____

Comments:

III. FLEXIBILITY

Agree _____ Disagree _____

Comments:

IV. RESULTS

Agree _____ Disagree _____

Comments:

V. METHODS

Agree _____ Disagree _____

Comments:

VI. COORDINATION

Agree _____ Disagree _____

Comments:

VII. COOPERATION

Agree _____ Disagree _____

Comments:

VIII. ACTIVITIES MATERIALIZING

Agree _____ Disagree _____

Comments:

IX. MAINTENANCE OF ACTIVITY

Agree _____ Disagree _____

Comments:

X. PERCENTAGE OF ATTENDANCE

Agree _____ Disagree _____

Comments:

A Study of Evaluation in Adult Education in Vocational Agriculture

EXPLANATION—The purpose of this study is to determine criteria for a good program in vocational education in agriculture for adults and to determine useful evaluation practices used in such programs.

Please examine carefully the instructions that are given at the beginning of each section and supply the answers needed with the best available information from your 1951-1952 program.

Please return your reply at the earliest possible date in the enclosed envelope.

Name of school system.....

Name of respondent.....

Position held.....

Address City State

PART ONE

MEASURES FOR CRITERIA IN ADULT EDUCATION IN VOCATIONAL AGRICULTURE

Respond to each criterion measure as indicated. Base your responses on the 1951-1952 program.

I. RELATIVE SIZE OF PROGRAM

Indicate in the space at the left the appropriate number for each of the following questions:

- 1. What was the total clock hours attendance for adult farmer activities conducted as a part of systematic instruction? Example—One man attending all two hour sessions of a 10 session course would have 20 clock hours attendance.
- 2. How many farmers are there in your community?

II. RURAL CLIENTELE SERVED

Place an X before each segment served.

- | | |
|---|--|
| 1. Young adult farmers (age 25-35) | 9. City or village businessmen in related agricultural occupations |
| 2. Middle-aged adult farmers (age 35-55) | 10. Farm owners not farming |
| 3. Farmers nearing retirement (age 55 up to retirement) | 11. Farm women |
| 4. Retired farmers | 12. Foreign-born farm laborers |
| 5. Tenant farmers | 13. Native farm laborers |
| 6. Part-time farmers | 14. Workers in related agricultural occupations |
| 7. Non-farming rural population | 15. Illiterates engaged in farming |
| 8. Farm leaders | 16. Illiterates engaged in related agricultural occupations |

III. FLEXIBILITY

Place an X before the one item in each section that describes the total program in your community.

A. Class activities were conducted during:

- | | |
|-------------------------------|---|
| 1. Morning hours only | 4. Morning and afternoon |
| 2. Afternoon hours only | 5. Afternoon and evening |
| 3. Evening hours only | 6. Morning, afternoon and evening |

B. Activities were conducted:

- | | |
|--------------------------|-----------------------------------|
| 7. 1 day per week | 9. 3 or 4 days per week |
| 8. 2 days per week | 10. 5 or more days per week |

C. Activities were conducted in:

- | | |
|-----------------------|-------------------------------|
| 11. 1 location | 13. 3 to 5 locations |
| 12. 2 locations | 14. 6 or more locations |

D. Activities were scheduled during:

- | | |
|----------------------------------|----------------------------------|
| 15. 1 quarter of the year | 17. 3 quarters of the year |
| 16. 2 quarters of the year | 18. 4 quarters of the year |

E. Continuous activities were scheduled for:

- | | |
|---|----------------------------------|
| 19. 1 quarter of the year or less | 21. 3 quarters of the year |
| 20. 2 quarters of the year | 22. 4 quarters of the year |

F. Activities were scheduled for a series of:

- | | |
|-------------------------------------|--|
| 23. 10 meetings per year | 25. 21 - 30 meetings per year |
| 24. 11 - 20 meetings per year | 26. 31 or more meetings per year |

IV. RESULTS

Respond to each measure below by placing your answer in the space before each measure.

A. Give the average number of approved practices put into use per farmer in the program in:

- | | |
|--------------------------------------|--------------------------------------|
| 1. Farm management | 5. Crop farming |
| 2. Marketing | 6. Improved living on the farm |
| 3. Soil and water conservation | 7. Farm mechanics |
| 4. Livestock farming | |

..... B. Give the number of cooperative buying and selling activities organized as a result of instruction in adult education in vocational agriculture.

..... C. Give the number of cooperative organizations formed as a result of instruction in adult education in vocational agriculture.

..... D. Give the number of farm organizations formed as a result of instruction in adult education in vocational agriculture.

..... E. Give the number of farmers used as special teachers of adult classes.

..... F. Give the number of farmers who helped to plan the instructional program in adult education in vocational agriculture.

..... G. Give the number of other leadership activities assumed by class members.

..... H. Give the number of community betterment projects which have been completed.

..... I. Place an X before each item below where, as an outgrowth of instruction, improvement was noted in one or more persons.

- | | |
|-------------------------------------|--|
| 1. Dependability | 8. Literacy |
| 2. Scientific attitudes | 9. Home and family living |
| 3. Fair play | 10. Housing |
| 4. Broadmindedness | 11. Recreation |
| 5. Public problems | 12. Sense of group unity |
| 6. Interest in farming | 13. Activities in the community |
| 7. Ability in self expression | 14. Understanding of basic principles of farming |

V. METHODS

What were the general methods used in your program?

Rate each item by using:

- 0 if seldom or never used
1 if occasionally or sometimes used
2 if ordinarily or usually used

..... 1. Courses were offered as a part of a series on one general subject.

..... 2. Courses were offered as separate units.

..... 3. Field trips were conducted.

..... 4. Radio broadcasts were given in content fields by the agricultural instructor.

..... 5. Radio-listening discussion groups were held.

..... 6. Television-viewing discussion groups were held.

..... 7. Workshops, short institutes or conferences were used.

..... 8. Courses were offered in cooperation with industrial, business and civic organizations.

..... 9. School-sponsored clubs were organized for adults.

..... 10. Guidance services were provided for adults.

..... 11. Certificates or diplomas were given for certain levels of accomplishment.

12. Classes were taught by:

- | | |
|--|---|
| a. Agricultural instructor | c. Farmer |
| b. Worker from allied agricultural occupations | d. Extension specialist under supervision of agricultural teacher |

13. As a part of systematic instruction the following methods were used:

- | | |
|-------------------------|---------------------------|
| a. Forum | d. Symposium |
| b. Lecture series | e. Panel |
| c. Debate | f. Group discussion |
| | g. Demonstration |
| | h. Reports |

VI. COORDINATION

What methods were used to coordinate the programs of adult education in vocational agriculture?

Rate each item by using:

- 0 if seldom or never used
- 1 if occasionally or sometimes used
- 2 if ordinarily or usually used

- 1. Advisory council for whole agriculture program
- 2. Informal group meetings with leaders
- 3. Informal meetings with individuals
- 4. A director (or coordinator) engaged by the public school
- 5. Examination of published literature of other agencies
- 6. Agreements defining the field of educational activity between the school and other agricultural agencies
- 7. A school policy defining the fields of educational activity of adult, young farmers and day school vocational agriculture and institutional on-farm training
- 8. Integration with total school adult education program
- 9. Other (specify)

VII. COOPERATION

What types of cooperation are practiced by your school with reference to other adult education agencies in your community and with reference to personnel in the school?

Rate each by using:

- 0 if seldom or never done
- 1 if occasionally or sometimes done
- 2 if frequently done

- 1. Cooperate with other agricultural agencies (other than public school) in planning and carrying out community wide education projects in agriculture such as grass day, farm face lifting, hay making demonstrations and soil conservation.
- 2. Cooperate with educational and community groups in the support of other worthwhile community projects, such as park improvement and clean-up campaigns.
- 3. Cooperate with other adult education agencies in the publication of an adult education directory with a listing and/or description of educational activities of each agency.
- 4. Interchange with non-school personnel as resource persons.
- 5. Make available the agricultural library in the school to rural community groups.
- 6. Inter-loan with non-school groups, such specialized equipment as cement mixers, movie and slide projectors and other similar items.
- 7. Cooperate with the institutional on-farm-training teacher in the school in planning and carrying out agricultural education programs.
- 8. Cooperate with the teacher of the young farmer group in the school in planning and carrying out programs of adult education.
- 9. Co-operate with the shop teacher(s) in use of shop facilities.
- 10. Co-operate with all persons responsible for or involved in the total program of adult education in the public school in planning and carrying out educational activities in the school.
- 11. Cooperate with all persons responsible for or involved in the total school program in developing educational activities within the school and community.

VIII. ACTIVITIES MATERIALIZING

Indicate in the space at the left the appropriate number for each of the following questions:

- 1. How many courses were planned?
- 2. How many field trips and other activities were planned? (refer to section V)
- 3. Of the courses and activities listed in questions 1 and 2 above, how many actually started?

IX. MAINTENANCE OF ACTIVITY

Indicate in the space at the left the appropriate number for each of the following questions:

- 1. Of the number of courses and activities listed in question 3 of section VIII, how many were carried to completion?
- 2. Of the number of courses and activities listed in question 3 of section VIII, how many were combined because of declining attendance?
- 3. Of the number of courses and activities listed in question 3 of section VIII, how many held meetings in addition to those planned?

X. PERCENTAGE OF ATTENDANCE

- Indicate in the space at the left the percentage of attendance. Compute the percentage of attendance by totaling the average session attendance for all groups and classes and divide the sum by the total enrollment in the program.

PART TWO

PRACTICES USED IN EVALUATING ADULT EDUCATION IN VOCATIONAL AGRICULTURE

Rate each evaluation practice listed below according to the following rating scale:

- 0 if seldom or never used
- 1 if occasionally or sometimes used
- 2 if ordinarily or usually used

Base your responses on your 1951-52 program.

- 1. Clearly stated objectives are used to form the basis for evaluation.
- 2. A list is made of the kind of evidence needed to indicate that objectives are being met.
- 3. A list is made of the methods and devices to use in collecting evidence which will reveal that objectives are being met.
- 4. Evaluation occurs at specific intervals throughout the year.
- 5. Instruction is evaluated by analyzing check lists of approved practices planned and used.
- 6. A check of approved practices carried out is maintained on a chart.
- 7. Production records of class members are used to indicate effectiveness of instruction.
- 8. Part of the last meeting of the course is used for evaluation.
- 9. Enrollment records are analyzed to determine the extent to which the program serves all who want, need or can use adult education.
- 10. Attendance records are analyzed to determine regularity of attendance and the type of farmers who are attending.
- 11. Change in attitude of class members is noted.
- 12. Leadership development is noted.
- 13. Co-operative activities developed are noted.
- 14. Co-operative organizations formed are noted.
- 15. Results of instruction with class members are compared with standards, averages, individual or other goals.
- 16. Results of instruction with class members are compared with the economic and social achievement of non-class members.
- 17. Progress is compared with progress of other years and progress in other communities.
- 18. Systematic study of the community is made to discover changes in farming due to instruction.
- 19. Practices used are observed on tours to farms of class members.
- 20. Part of a special field day is devoted to evaluation.
- 21. Part of an on-farm-meeting during the summer is used for evaluation.
- 22. Pictures of "before" and "after" situations are used.
- 23. Farmers and the teacher agree on the value of an approved practice.
- 24. The instructor evaluates results of instruction as he visits the farms of the class members.
- 25. Advisory committees assist in the evaluation of the program.
- 26. Class members assist in the evaluation of the results of instruction.
- 27. Business men assist in the evaluation of the program.
- 28. Other teachers in the school, administrators, school board members, state supervisory staff and college or university education staff help evaluate the program.
- 29. Other agricultural education agencies assist in the evaluation of the program.
- 30. Plans and action are based on the analysis and interpretation of the results of evaluation.

Please return this completed form to:

Walter P. Schroeder
Instructor in Vocational Education
206 Morrill Hall
Michigan State College
East Lansing, Michigan

G

COVER LETTER FOR QUESTIONNAIRE

The increasing emphasis on vocational education for adult farmers has created the need for validating practices used by teachers in evaluating the programs for which they are responsible. You are one of the selected teachers in Illinois from whom I am asking information. Is it possible for you to use about thirty minutes of your time to provide information on criteria and practices as carried out by you in your program of adult education?

I know that you have a busy schedule from the one fact that you are interested in adult education. I know too, that much of the satisfaction you get from your work comes through activity with adult farmers. Will you help adult education progress by filling out the enclosed questionnaire, putting in the envelop provided and mailing it today?

This study has the approval and support of Mr. J. E. Hill, head state supervisor for Illinois. As I am interested in the general use of evaluation practices in Illinois, neither schools nor personnel will be identified in the study.

Your cooperation in this project is highly appreciated.

Sincerely yours,

Walter P. Schroeder

Instructor in Vocational Education

WPS/a

H

FIRST FOLLOW-UP CARD

East Lansing, Michigan

Dear Sir,

Your completed questionnaire on evaluation in adult education is still needed! Can you take about 30 minutes now, fill it out and send it to me today?

Please feel free to ask for another questionnaire if you need one.

Your work on this study will be highly appreciated.

Sincerely yours,

W. P. Schroeder, Instructor
In Vocational Education
Michigan State College

I

SECOND FOLLOW-UP CARD

East Lansing, Michigan

Dear Sir,

If the questionnaire on evaluation in adult education that I sent you isn't in the mail, could you take about 30 minutes now, fill it out and send it to me today? It is highly desirable that your information be submitted in order to provide valid data from your state for this study which is being done in nine north central states.

Your efforts on this project are highly appreciated.

Sincerely yours,

Walter P. Schroeder
Instructor in Vocational
Education
Michigan State College