

THE EFFECTIVENESS OF PRACTICES OF INDIVIDUAL  
ON-FARM INSTRUCTION  
USED BY TEACHERS OF ADULT-FARMER COURSES  
IN MICHIGAN

By  
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AN ABSTRACT

Submitted to the School for Advanced Graduate Studies of  
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DOCTOR OF EDUCATION

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1960

Approved



Purposes: To study the practices of individual on-farm instruction of adult farmers to determine (1) the frequency of their use by Michigan teachers, (2) the evaluation of the instructional effectiveness of the practices by the teachers, (3) some new or promising practices that might be used more widely in Michigan, and (4) the effectiveness of certain promising practices from teachers who used them on a demonstrational basis.

Methods: A survey with a checklist of 125 practices was taken among all Michigan teachers of adult-farmer courses during 1957-58. This checklist was returned by 108 teachers, or 78.2 per cent. A survey with the checklist was also made of outstanding teachers of on-farm instruction of adult farmers from thirteen states of the Central Region, as selected by head state supervisors of each state, with fifty-six replies, or 80 per cent returns. These two groups were statistically compared to determine promising practices that were being used more frequently and evaluated to a higher degree by the outstanding teachers. Ten of these promising practices were then used on a demonstrational basis by Michigan teachers during 1958-59, after which they gave a detailed evaluation of the practices.

Findings and interpretations: Michigan teachers had an average of five and nine-tenths years of experience in teaching

adult-farmer courses, with an average of 56.3 individual on-farm visits made to adult farmers per year. The average number of visits made by the outstanding teachers of the Central Region was ninety-two per year. Thirty-eight practices from the checklist of 125 were used more frequently and evaluated higher by the teachers of the Central Region as compared with the Michigan teachers.

The promising practices that were demonstrated by the Michigan teachers were selected as having the following advantages by a majority, or more, of the teachers using them.

1. Maintain a list of potential farm visits to be made to adult farmers. Advantage--used teacher's time economically.

2. Assist the adult farmer to conduct trial plots on the farm. Advantages--farmers responded well to its use, learned more, and adopted more farm practices.

3. Analyze with the adult farmer the instruction of a previous adult class as it is related to his own farm. Advantages--farmers adopted more farm practices, responded well to its use, and learned more.

4. Analyze the adult farmer's DHIA, soil test, or other farm records. Advantages--farmers responded well to its use, adopted more farm practices, and learned more.

5. Use local production standards to assist the adult farmer to evaluate his business. Advantages--farmers responded

well to its use and adopted more farm practices.

6. Take colored slides or snapshots of approved practices being adopted by the adult farmer to show the "before" and "after" situation. Advantages—improvement of class instruction, farmers responded well, and learned more.

7. Survey adult farmers during class to determine their viewpoints concerning farm visits. Advantage—farmers responded well to its use by the teacher.



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## CHAPTER I

### INTRODUCTION OF THE PROBLEM

In this chapter the problem will be described and the reasons for studying the problem will be discussed. In addition, a list of the terms, assumptions, and limitations of the study will be presented.

#### Background of the Study

The public school adult-farmer course consists of two major parts--classroom instruction and on-farm instruction. The classroom instruction should be based on the problems of the class members. Therefore, the teacher should be as concerned with on-farm instruction as he is with classroom instruction. Byram and Wenrich<sup>1</sup> emphasized the importance of on-farm instruction when they said,

Instruction on the farm is placed first because satisfactory in-school instruction in farming can be based only upon farming activities of members of the classes.

Not only is it important that the initial phases of on-farm

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<sup>1</sup>Harold M. Byram and Ralph C. Wenrich, Vocational Education And Practical Arts In The Community School. (New York: The Macmillan Company, 1956) p. 211.

instruction be given before the classroom work starts but also that on-farm instruction follows the classroom instruction. Only by on-farm visits can the teacher fully evaluate the vocational effectiveness of his classroom teaching. This effectiveness is usually referred to as the amount or degree of learning which is accomplished by the student. A deeper concept, however, is that learning must be carried to the "doing" stage. True learning is revealed by a change of behavior in the student. Since much of the "doing" stage of the instruction will be performed by the adult-farmer student on the farm, the teacher must realize the importance of making visits to the farm. Scarborough and Coggin<sup>2</sup>, reasoned that on-farm instruction is an excellent method of moving the student into the "doing" stage of many practices that are taught in the classroom. While the teacher is on the farm he can assist the student to adapt knowledge, previously taught in the calssroom, to the individual farmer's problems. He can evaluate the effectiveness of his teaching by observing the amount and degree of learning by the student as demonstrated in a changed behavior in his farming operations. In concluding their discussion,

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<sup>2</sup>C. C. Scarborough and J. K. Coggin, "More Effective Teaching Through On-the-farm Instruction", Agricultural Education Magazine, 27: 196-7, March, 1955.





Scarborough and Coggin state

. . . that not only is on-the-farm instruction the key to more effective teaching, but that it is the only route to more effective teaching in vocational agriculture.

The importance of on-farm instruction is stressed by Krebs<sup>3</sup> who says that

. . . instruction is not completed, but only begun in the classroom. Individual instruction on the home farm should be the teacher's most effective approach.

The teacher who is not given sufficient time in his schedule, or does not use the time after it is provided by the school, to follow-up the class meetings with on-farm visits is missing an excellent opportunity to make the instruction more effective. To further emphasize the importance of on-farm instruction for adult farmers, Krebs<sup>4</sup> states that

On the contrary, the on-farm instruction, where planning is specific to existing conditions, is probably the most important phase of the adult education instructional program. In the final analysis, the effectiveness of the adult education program in agriculture will be determined by the effectiveness of the on-farm instruction.

This quotation should not be interpreted as a depreciation of

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<sup>3</sup>Alfred H. Krebs, For More Effective Teaching, (Danville, Illinois: The Interstate Printers and Publishers, Inc., 1954) p. 29.

<sup>4</sup>Ibid., p. 79.



the value of group instruction in the classroom. It should be clear, however, that the degree of effectiveness of the classroom instruction will be determined by the quality and quantity of on-farm instruction.

A similar case is very well presented by Bundy<sup>5</sup> who said

In most cases, very little can be accomplished in the meeting other than to develop an awareness and interest in a particular practice. Most farmers need considerable help in evaluating and in trying and in finally adopting practices. . . . Much of this assistance and instruction must be given on the farm.

A series of meetings that familiarize adult farmers with new practices and stimulate their interest in the practices will not necessarily lead them to adopt the practices in most cases. A more thorough job of teaching must be done by the teacher on the farm. Bundy says that

Our purpose is to help them make application of ideas discussed in class to their individual situations. Once they have made application of the practices it is our responsibility to help them evaluate the effectiveness of the practice as it has been applied.

Most practices discussed in meetings must of necessity be presented in a general manner to the students. Varied con-

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<sup>5</sup>C. E. Bundy, "How Farmers Adopt New Practices", Agricultural Education Magazine, 33:30-2, August, 1960.

<sup>6</sup>Loc. Cit.

ditions of soil, finances, interests of the farmer, managerial skills, and other factors will necessitate a modification of the practices to fit the individual farm. This may not be easily done by the adult farmer, especially when more complex management practices are involved. The teacher of vocational agriculture, with an understanding of the fundamentals upon which the practices are based, can provide instruction on the farm that will facilitate a more effective adaptation of the practices to the individual situation. The teacher can also act as an impartial observer and help the farmer to evaluate the effectiveness of the practices. A concluding suggestion by Bundy<sup>7</sup> is that

Our effectiveness as vocational agriculture teachers will improve greatly if we will budget our time and perhaps ask the school to provide additional time for on-farm teaching. Six or eight visits per individual enrolled may be a desirable goal.

On-farm instruction is stressed by the Michigan Department of Public Instruction<sup>8</sup> in the following statement

Time during the school day which is scheduled for a teacher to provide on-farm instruction and to work with out-of-school groups is as important as classroom instruction.

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<sup>7</sup>Loc. cit.

<sup>8</sup>This We Believe About Vocational Agriculture, Publication No. 509, (Lansing, Michigan: The Department of Public Instruction, 1960), p. 12.



The teacher who is asked to provide on-farm instruction outside of regular school hours and on Saturdays during the school year is not apt to conduct a sufficient number of visits or take adequate time to give actual instruction on the farm.

Kelsey and Cannon<sup>9</sup>, writing concerning the Cooperative Extension Service, bring out the value of farm visits as one of the most effective teaching methods in the Extension Service, but one of the most expensive methods used. Therefore, planning is a very important prerequisite to the successful and most efficient use of farm visits.

These endorsements of the importance of on-farm instruction are examples of the high regard that agricultural educators have for on-farm instruction of adult farmers.

#### Questions Which Were Studied

To guide the study toward meaningful ends, answers were sought for the following major questions about on-farm instruction of adult farmers.

1. What practices of individual on-farm instruction are being used by Michigan teachers of adult-farmer courses?

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<sup>9</sup>L. D. Kelsey and C. H. Cannon, Cooperative Extension Work, (Ithaca, New York: Comstock Publishing Associates, 1955), p. 372.

2. How frequently are the practices of individual on-farm instruction being used by Michigan teachers of adult-farmer courses?

3. How effective are the individual on-farm instruction practices which are being used by teachers of adult-farmer courses in Michigan, as evaluated by those teachers?

4. What are some of the more frequently used and more effective practices of individual on-farm instruction as evaluated by Michigan teachers of adult-farmer courses?

5. What practices of individual on-farm instruction are being used by outstanding teachers of adult-farmer courses from states of the Central Region?

6. What are some of the more frequently used and more effective practices of individual on-farm instruction as evaluated by teachers from states of the Central Region?

7. What are some of the more effective practices of individual on-farm instruction that are being used more frequently by outstanding teachers of the Central Region than by Michigan teachers of adult farmers?

8. How many on-farm instruction visits are made by the teachers of adult-farmer courses each year?

9. What are some advantages of certain practices of individual on-farm instruction when used frequently by Michigan teachers of adult-farmer courses on a demonstrational basis?





### The Problem

The specific problem of this study of the practices of individual on-farm instruction of adult farmers is to (1) determine the variation in the effectiveness of the practices, (2) identify some promising practices from a survey of outstanding teachers of the Central Region, and (3) have Michigan teachers demonstrate the advantages of certain promising practices.

### The Hypotheses

The following hypotheses were formulated concerning this study of individual on-farm instruction of adult-farmer courses.

1. Practices of individual on-farm instruction being used by Michigan teachers of adult-farmer courses vary in their effectiveness according to the evaluation of those teachers.

2. There are some practices of individual on-farm instruction that are being used frequently and are considered to be effective by some outstanding teachers of adult-farmer courses in the Central Region which are not being used or used as frequently by Michigan teachers of adult-farmer courses.

3. Michigan teachers who use or who more frequently use certain practices of individual on-farm instruction of adult farmers will identify certain advantages of these practices.

## A Rationale For The Study

In this section will be presented a philosophical point of view of adult education for farmers under the sponsorship of the public schools. This will provide a point of departure from which the specific problem of on-farm instruction of adult farmers can be studied.

Should adult education be provided? This question has been well presented in a statement by the Adult Education Association of Michigan in a program announcement during the fall of 1957.

Are the critical questions these days being decided by children or by adults? Are the revolutions in technology, community structure and public affairs presenting their major challenges to children or to adults? Is the average education of the average adult completed, on the average, more than twenty years ago, adequate to meet the personal, vocational, and civic situations a man meets in days like these? Does the process of growth and fulfillment of the human being as a person continue only through childhood and adolescence?

A person thinking through the obvious answers to such questions should most certainly see the value and necessity of adult education for the citizens of our society. Assuming that there is a definite need in our society for adult education, let us proceed to the next question.

Can adults benefit from this education? In short, can adults learn efficiently? Many would say that adults can not



learn efficiently. The adage that, "You can't teach an old dog new tricks," is frequently used to express this belief in our society. However, according to Thorndike<sup>10</sup> this belief is inaccurate. His study of adult learning brought out the following conclusions:

1. Individuals reach their greatest mental vigor at about twenty-one years of age.
2. This high level of mental vigor is maintained for a period of approximately ten years.
3. The loss of mental vigor tends to go backward rather slowly.
4. Experience is a vital factor in learning. It tends to more than offset the loss due to deterioration of mental vigor, making a man's best years for learning to solve the real problems of life to be from forty-five to forty-nine years of age.
5. Adults of thirty to fifty years of age can probably learn better than children, provided the adult wants to learn.

According to these conclusions, the adult's experience and motivation to learn could much more than compensate for his slightly reduced mental vigor at middle age or later. It seems that adult farmers, as a group, would certainly benefit from experience in farming and would be highly motivated, in many cases, to gain new knowledge, abilities, and skills in their vocation because of the highly complicated and competitive nature of farming.

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<sup>10</sup>Thorndike, E. L., Adult Learning, (New York, N.Y.: The Macmillan Company, 1928). Cited from E. W. Garris, Teaching Vocational Agriculture, (New York, N. Y.: McGraw-Hill Company, Incorporated, 1954), p. 251.

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Should adult farmers be educated by publicly supported agencies? This is the next logical question to discuss. Because of the splendid history of several public agencies in educational programs for farm people, considerable information from studies and records could be referred to in order to show the benefits of such educational programs to the public.

Esra Taft Benson<sup>11</sup>, United States Secretary of Agriculture, recently stated

Take away the results of the last seventy-five years of Agricultural Research and Education in this country and you would reduce the nation to a fifth-rate power.

When a person of Mr. Benson's experience and position makes such a definite statement, it should certainly cause one to consider the value of agricultural education to the nation.

York<sup>12</sup> quotes Dr. Byron T. Shaw, Administrator, Agricultural Research Service of the United States Department of Agriculture, as saying that

. . . if farmers farmed in 1950 as they did just ten years previously, in 1940, the American housewives would have to pay ten billion dollars more each year for food.

According to these two sources just mentioned, it might

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<sup>11</sup>Michigan Farmer, (East Lansing: Capper-Harman-Slocum, Inc.), Volume 227, February 2, 1957, p. 29.

<sup>12</sup>E. T. York, Jr., "Are We Losing Another Race To The Russians?", Better Crops With Plant Food, December, 1957, p. 24-26.

be stated that the technological advancement of the agricultural industry due to education, thus resulting in higher efficiency and less expensive food for the American people, has brought savings that more than offset the tax dollars spent. In addition to the direct savings to the consumer, the many related agricultural industries that serve the technical needs of farmers have greatly expanded and prospered. Such related agricultural industries as the fertilizer, farm machinery, chemical and feed manufacturers and distributors owe much of their business to the technical advances of farming.

In a study of projected needs for farm output, by the United States Department of Agriculture<sup>13</sup>, the conclusion was that, "Our projected needs for livestock production in 1975 may be about 45 per cent above production in 1951-53." This much increase in production, while considerable farmland is being taken out of production by urban and highway expansion, will require continued development of technical and management skills by farmers. The report<sup>14</sup> also says that, "The projections call for an increase in total crop production by a fourth from 1951-53

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<sup>13</sup>United States Department of Agriculture, Agricultural Research Service, Farm Output--Past Changes and Projected Needs. Agricultural Information Bulletin No. 162, (Washington, D. C.: United States Government Printing Office, August, 1956) p. 2.

<sup>14</sup>Ibid.



to 1975." The report suggests that the agricultural industry should not worry about whether it can be done but how it can be done. The "how" question suggests two phases. The initial phase is how to produce more food by discovering and developing new technical methods. The second and most important phase is to get farmers to adopt the new methods. Educators should accept an increasing responsibility for teaching farmers to adopt methods that agricultural scientists develop.

A final thought concerning whether adult-farmer education should be provided by public agencies would be that farmers are decentralized. That is to say, there is no concentration of managerial direction. Millions of farm businesses, independently owned and operated, afford little opportunity for furthering the education of the farmer except through public agencies. Public agencies, coordinated at various levels of government, should be able to provide educational programs for farmers, thereby offering opportunities for all farm people to obtain agricultural training.

What part can a public school adult-farmer course perform in the education of farmers? With the above discussion as a foundation, this section will highlight some of the unique characteristics of public school adult-farmer courses that make them a vital link in the education of adult farmers. The Smith-



Hughes Act<sup>15</sup>, which provided for the beginning of vocational education, states in Section 10

That in order to receive the benefits of such appropriations for the salaries of teachers, supervisors, or directors of agricultural education that such education shall be that which is under public supervision or control; that the controlling purpose of such education shall be to fit for useful employment; that such education shall be of less than college grade and be designated to meet the needs of persons over fourteen years of age who have entered upon or who are preparing to enter upon the work of the farm or of the farm home;

The part of the act that states "who have entered upon . . . the work of the farm" clearly indicates that it was intended that adult farmers should be provided with vocational agricultural instruction.

The teacher of vocational agriculture is in a strategic position to offer agricultural education for adult farmers in the community school area. Because of his general training in many technical areas of agricultural science, he can help the farmer adjust new practices to the farm situation and still keep other parts of the farm in balance. He can understand the technical jargon of the scientist and yet translate that terminology into a layman's level of understanding.

Public school adult-farmer courses can utilize the

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<sup>15</sup>Glen Charles Cook, Handbook on Teaching Vocational Agriculture, (Danville, Illinois: The Interstate Printers and Publishers, 1947), p. 790.

facilities of the department of vocational agriculture which usually includes farm mechanics equipment and a shop, as well as visual aids, textbooks on most phases of agriculture, and other materials.

Public school adult-farmer courses are usually sponsored by one of the centers of community life--the community school. Because of this closeness to the people and the social attraction of this community-centered institution, the teacher of vocational agriculture has a very natural environment in which to teach adult farmers. He knows many of the farms and farm families personally because of his contacts through the high school students and other agricultural groups. Having a wealth of knowledge about the social structure of the community, he is able to effectively work with neighborhood leaders and groups, and understand their folkways, customs, and traditions.

From a report of a national study of over 5,000 veteran students enrolled in the institutional-on-farm training program<sup>16</sup> in 1951, it was stated that

There is a clear mandate to leadership in public education for more complete and comprehensive programs for young and adult farmers as a regular part of the work of public schools.

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<sup>16</sup>Committee on Research in the Education of Farm Veterans, Education of Veterans in Farming, American Vocational Association Research Bulletin No. 5, (Washington, 5, D. C.: American Vocational Association, Incorporated, 1952) p. 65.

This program was administered through the vocational agricultural departments in most school districts for World War II veterans interested in establishment in farming. For the young farmers who participated in this program to express such faith in further training for farming through the public schools is certainly heartening.

The final characteristic of the public school adult-farmer course and a very significant one is that of impartiality. Due to the sponsorship of the program by the local public school, a high degree of impartiality is possible. The teacher of vocational agriculture is responsible to the citizens of his district. He need not be subjected to pressure from public agencies above the local level or private interests around him. This sponsorship at the same time places him in a position where he can coordinate the multitude of agricultural educational resources available to the farmers of the school district. These resources may include technical literature, visual aids, speakers or technicians which may be furnished by public agencies on the county or state level, commercial firms, or farm organizations.

In conclusion, adult-farmer educational programs through the public schools are one of the vital links of the agricultural educational system for farmers.

The Need for a Study of On-Farm Instruction  
in Adult-Farmer Courses

Individual on-farm instruction for adult farmers was selected as the area in which to conduct a study because research is somewhat lacking on the subject as evidenced by the literature.

A summer school workshop group of twelve teachers of vocational agriculture and a class of fifteen teachers enrolled in a course on adult-farmer education were asked to discuss what areas of adult-farmer education they would prefer to see research done on. Of the twenty-seven teachers, twenty-two suggested on-farm instruction of adult farmers. There were several other valuable suggestions.

Leaders in agricultural education have identified on-farm instruction for adult farmers as an area which needs more careful study and development.

Jeter<sup>17</sup> suggests several causes of a ". . . lack of balance between classroom and on-farm instruction." The need for a teacher to have a philosophy about the importance of on-farm instruction, the need for a better understanding of

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<sup>17</sup>C. B. Jeter, "Using Farm Visits To Make Instruction Effective", Agricultural Education Magazine, 28: 202-3, March, 1956.

this phase of the vocational agricultural program by school administrators, and the lack of training of prospective teachers on how to plan and conduct on-farm instruction are some of the causes mentioned by Jeter. It seems that many of these causes of insufficient on-farm instruction could be alleviated by findings of research which would provide teachers and teacher trainers with information on the situation and suggestions for improving it.

Stevens<sup>18</sup> suggests in an article devoted to the need for research in on-farm instruction that there are important questions for such research, and gives some excellent thoughts on how to design studies on the subject.

Because of the suggestions of the above leaders and teachers as well as others, the study of individual on-farm instruction of adult farmers was undertaken.

#### Definition of Terms

The following definitions are given to clarify the meaning placed on some of the more frequently used terms.

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<sup>18</sup>Glenn Z. Stevens, "Research In On-Farm Instruction", Agricultural Education Magazine, 30: 16-8, July, 1957.





1. Adult farmers. Those who are engaged in farming, who regularly attend adult-farmer classes taught by vocational agricultural teachers, and who are usually established in the farming business. They are usually twenty-five years of age or more and are usually married.

2. Adult-farmer course. An educational program providing systematic instruction which is designed to help solve some of the local agricultural problems of adult farmers in the public school district through group instruction and individual on-farm instruction, and is conducted by the teacher of vocational agriculture.

3. Individual on-farm instruction. This term refers to teaching and other activities that the teacher performs on the farms of the individual members of the adult-farmer class.

4. Practices of on-farm instruction. Those instructional methods, techniques, or procedures that a teacher of vocational agriculture performs in connection with instruction on the farm. This phrase is sometimes simply referred to as a "practice."

5. Farm practices. This phrase refers to the farm skills, jobs, or decisions that the farmer performs. They will always be listed as "farm practices" in this report to avoid being confused with the practices of on-farm instruction referred to above.

6. Effective on-farm practices. Those practices,

techniques, or procedures which, if properly performed by the teacher on the farm, will usually produce desirable educational results in the individual adult farmer at the doing level.

7. Desirable results. This term refers to the use of the practices appearing in the checklist which provided the teacher with results that he felt were desirable according to his own local objectives.

#### Assumptions of the Study

Certain assumptions were made concerning various phases of the study. Those assumptions are listed in this section.

1. Effective on-farm instruction has a positive effect on the success of an adult-farmer course.

2. The teachers of vocational agriculture who teach adult-farmer courses are interested in analyzing their present practices of on-farm instruction and improving their ability in this phase of the course.

3. The effectiveness of the individual on-farm instruction given by teachers of adult-farmer courses can be improved by those teachers adopting certain promising practices that have not been used, or by using those practices more frequently.

4. The head state supervisors of agricultural education of the Central Region are able to select outstanding teachers of adult-farmer courses in respect to the teachers' ability to

perform individual on-farm instruction.

5. The effectiveness of certain promising practices of on-farm instruction of adult farmers can be determined through the evaluation of them by the teachers who have made use of those practices on a demonstrational basis.

#### Limitations of the Study

Certain limitations of what this study was to accomplish have been recognised. These were necessary because of the wide range of questions that become pertinent when educational problems of this nature are studied. The limitations are stated below.

1. The study was concerned with individual on-farm instruction only, and did not attempt to consider group instruction on the farm.

2. The teachers from the states of the Central Region were selected for their outstanding ability in conducting individual on-farm instruction of adult farmers. Their responses should not be interpreted as representative of all teachers from those states nor of the Central Region in general.

3. The survey of practices of on-farm instruction used by outstanding teachers was limited to the states of the Central Region of the United States.

4. The information collected concerning practices of

individual on-farm instruction was based only on the adult-farmer courses of the teachers. Practices of on-farm instruction used with the high school, young farmer, or institutional-on-farm training students were not included in the study.

5. Only ten of the practices that appeared to be most promising were demonstrated. There are undoubtedly several other equally effective practices that should be investigated.

#### Summary of the Chapter

One of the major responsibilities of the teacher of vocational agriculture who teaches an adult-farmer course is to provide on-farm instruction. It is essential if the subject matter presented in the classroom is to be carried to the "doing" stage by the adult farmers. It should be provided prior to, during, and after a specific course is taught. During this study the practices of individual on-farm instruction of adult farmers will be identified, the extent of their use will be determined, and an evaluation of their effectiveness will be obtained.

## CHAPTER II

### REVIEW OF LITERATURE

A search of the literature revealed a limited number of studies concerned with on-farm instruction of adult farmers. A very comprehensive study of the Institutional-On-Farm Training Program for war veterans dealt with on-farm instruction in a general way. This material will be referred to frequently.

In this chapter some of the previous studies are reported under the same sub-headings that were used in the checklist of "Individual On-Farm Instruction For Adult Farmers" (See Appendix I) which was used in the present study. Several additional studies do not apply directly to the above mentioned sub-headings. Those studies will be reported in a general section later in this chapter.

#### Organizing for Visits

A study in the Central Region<sup>19</sup> of practices being used

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<sup>19</sup>Harold M. Byram, Harry W. Kitts, and Lloyd J. Phipps; Organizing, Conducting And Evaluating Adult-Farmer Courses In The Central Region, (East Lansing, Michigan: Bureau of Research and Service, College of Education, Michigan State University, 1955), p. 27.

by 329 teachers of adult-farmer courses revealed that 83.8 per cent of them reported in the on-farm instruction section that they, "Take helpful materials along on all farm visits," and gave the practice a value rating of 1.31 (1 = much value; 2 = some value; 3 = no value). Of the Michigan<sup>20</sup> teachers who participated in the Regional study, 85.7 per cent used the previously mentioned practice and valued it at 1.39. The practice to "Use class time to study the purposes of on-farm instruction" was used by 43.6 per cent of the teachers of the Region<sup>21</sup> with a value rating of 1.68, while 44.1 per cent of the Michigan<sup>22</sup> teachers used this practice and valued it at 1.67.

#### Scheduling Farm Visits

How frequently are adult farmers visited? In a study of 273 vocational agricultural instructors in Iowa covering

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<sup>20</sup>Rolf Edward Moeckel, A Study Of Practices Used By Teachers Of Adult-Farmer Classes In Michigan, (unpublished Master of Arts thesis, Library, Michigan State University: East Lansing, Michigan, 1953), p. 96.

<sup>21</sup>Byram, et al., op. cit.

<sup>22</sup>Moeckel, op. cit.

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1954-55, it was concluded by Bundy<sup>23</sup> that, "They visited the adults enrolled in evening classes an average of less than one visit." Furbay<sup>24</sup> found that in a survey of fifty farmers an average of five and nine-tenths visits were made per farmer in one Ohio school during 1955-56. The writer has kept detailed records on the visits to an average of twenty-two farmers during 1957-58 and 1958-59 and a summary of these records shows that adult farmers were visited an average of five and nine-tenths times per year.

How frequently do adult farmers wish to be visited?

James<sup>25</sup> found in a survey of 134 farmers in Edwards County, Illinois, that "The arithmetical average number of visits desired by the 106 farmers, excluding those who stated 'plus upon request' was 4.18."

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<sup>23</sup>C. E. Bundy, "On-Farm Teaching," Agricultural Education Magazine, 30:4, July, 1957.

<sup>24</sup>Walter M. Furbay, "An Evaluation of the Program of Adult Education in Vocational Agriculture at Clay-Genoa School," (unpublished Master's thesis, Library, Ohio State University: Columbus, Ohio, 1956) p. 126.

<sup>25</sup>Gerald B. James, "Edwards County Community Unit District Number One, Survey in Agricultural Education," (Division of Agricultural Education, University of Illinois: Urbana, Illinois) p. 31, (Mimeo.).





Guiler's<sup>26</sup> study at Canal Winchester, Ohio, revealed that,

80 per cent of the young and adult farmers reporting believed that the visits by the teacher of vocational agriculture should be more frequent than 'every three months', 49 per cent believed that the visits should be 'every other month or more frequently.' Only 13 per cent of the farmers believed that farm visits should be less than 'every three months.'

The Michigan veterans study by Sweany<sup>27</sup> reports that 43 per cent of the veterans and 40 per cent of their teachers thought farmers would want on-farm instruction monthly. Twenty-eight per cent of the veterans and 41 per cent of their teachers thought farmers would want on-farm instruction on a bi-weekly basis. Eighteen per cent of the veterans and 11 per cent of their teachers thought farmers would want on-farm instruction on a weekly basis.

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<sup>26</sup>Gilbert Samuel Guiler, "An Evaluation of the Young and Adult Farmer Program at Canal Winchester, 1950-51," (unpublished Master of Arts thesis, Library, The Ohio State University: Columbus, Ohio, 1951), cited from Research Committee of the Agricultural Education Section, American Vocational Association, Summary Of Studies In Agricultural Education, Vocational Division Bulletin.

<sup>27</sup>H. P. Sweany, The Institutional-On-Farm Training Program In Michigan With Implications For Adult Education, Research Bulletin No. 4, (East Lansing, Michigan: Department of Vocational Education, Michigan State College, and Lansing, Michigan: State Board of Control for Vocational Education, 1953), p. 22.



It was concluded in the national summary of the Veterans study<sup>28</sup>, "More than one-third of the veterans favored 85 to 100 hours of on-farm instruction per year in future programs."

To conclude the discussion on the frequency of on-farm instruction, adult farmers receive fewer farm visits than they say they would like or what others think they would want.

A time-study<sup>29</sup> by this writer showed that about 4.7 per cent of his professional time during the 1952-53 year was spent visiting adult farmers. The remainder of the schedule included the regular duties of a one-man department of vocational agriculture. McNelly<sup>30</sup>, after studying agricultural agents in Minnesota, stated that, "Our time-use study shows that 42 per cent of the agricultural agents' time was so used (individual teaching) in 1948. This 42 per cent includes office calls as well as on-farm instruction."

The studies that apply to this question again show a

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<sup>28</sup>Committee on Research in the Education of Farm Veterans, Education of Veterans in Farming, American Vocational Association Research Bulletin No. 5, (Washington 5, D. C.: American Vocational Association, 1952), p. 63.

<sup>29</sup>R. E. Moeckel, "How a Vo-Ag Teacher Uses His Time," Agricultural Education Magazine, 26: 182, February, 1954.

<sup>30</sup>C. L. McNelly, Individual Teaching By Agricultural Agents, (St. Paul 1, Minnesota: Agricultural Extension Service, University of Minnesota, United States Department of Agriculture, June, 1950), p. 7.

wide disparity between what farmers want and need, as evidenced by the Minnesota study of agricultural agents and the veteran studies, and what the teacher of vocational agriculture is able to provide in the way of on-farm instruction.

What arrangements should be made before the visit?

According to Sweany's<sup>31</sup> report,

In order to provide the right kind of on-the-farm instruction, teacher-pupil planning is necessary to determine the specific needs of the farmers, and to determine the time to provide it on the farm. High percentages of veterans and teachers thought the farmer should know when the teacher would come to the farm.

Many of this type of arrangements can be made during the class meetings. In communities where telephones are convenient the teacher can quickly check with the farmer he plans to visit.

What other practices were studied in the Central Region?

Several practices that the writer studied under the sub-heading of "Scheduling Farm Visits" were also included in the Central Region survey. Table I<sup>32, 33</sup> will show these practices, the percentage of teachers using the practices and the teachers' evaluations.

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<sup>31</sup>Sweany, op. cit., p. 15

<sup>32</sup>Byram, et al., op. cit.

<sup>33</sup>Moeckel, op. cit.

**TABLE I**  
**PRACTICES OF SCHEDULING FARM VISITS AS REPORTED**  
**IN THE CENTRAL REGION AND MICHIGAN STUDIES**

| Practices                                                                 | Per Cent Of Teachers Using |          | Teachers' Value Rating* |          |
|---------------------------------------------------------------------------|----------------------------|----------|-------------------------|----------|
|                                                                           | Central Region             | Michigan | Central Region          | Michigan |
| Visit farmer enrollees before the first meeting of the course             | 78.0                       | 91.4     | 1.22                    | 1.22     |
| Give priority to farmers needing most help                                | 68.0                       | 60.0     | 1.61                    | 1.37     |
| Provide a definite system of on-farm instruction visits during the summer | 47.6                       | 50.0     | 1.42                    | 1.60     |
| Provide on-farm instruction to class only when requested                  | 44.2                       | 37.5     | 1.30                    | 1.44     |
| Provide on-farm instruction while course is in progress                   | 38.4                       | 80.0     | 1.30                    | 1.25     |
| Take key individuals in the community along on farm visits                | 29.9                       | 34.3     | 1.50                    | 1.42     |

\*1 = much value; 2 = some value; 3 = no value

### Locating Problems During Visits

This section is concerned with what to teach on the farm, while the next sub-heading will deal with how to teach the subject.

Guiler<sup>34</sup> aided students during on-farm visits to carry out improvement practices, made suggestions on livestock improvement, answered farm management questions, and observed farm problems.

A summary made by Moeckel<sup>35</sup> of subjects that were discussed during on-farm visits to adult and young farmers of the Olivet, Michigan department of vocational agriculture during the 1957-58 school year is as follows: Crops--247, Soils--20, Dairy--50, Livestock--51, Farm Mechanics--15, Farm Management--43, and Miscellaneous--119.

A similar summary<sup>36</sup> of subjects that were discussed during 1958-59 on-farm instruction visits of Olivet adult and young farmers showed: Crops--188, Soils--41, Dairy--85, Livestock--54, Farm Mechanics--15, Farm Management--59, and Miscellaneous--164.

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<sup>34</sup>Guiler, op. cit.

<sup>35</sup>R. E. Moeckel, Olivet Community School Annual Report for Vocational Education, (Olivet, Michigan: Olivet Community Schools, 1957-58), p. 4.

<sup>36</sup>R. E. Moeckel, Olivet Community School Annual Report for Vocational Education, (Olivet, Michigan: Olivet Community Schools, 1958-59), p. 11.





The Michigan veterans study<sup>37</sup>, previously referred to, revealed that 56 per cent of the veterans and 70 per cent of their teachers suggested that the teacher should "supervise records" when visiting farms, 52 per cent of the veterans and 78 per cent of their teachers said the teacher should "learn about farms" and 41 per cent of the veterans and 70 per cent of their teachers favored having the teacher give "follow-up teaching" on his visits.

One conclusion of the national veterans study<sup>38</sup>, previously referred to, was that the building of individual programs around farm and home planning was a promising technique.

#### Instructing During Farm Visits

Demonstrations were mentioned as a teaching practice while on farm visits, in the studies by Guiler<sup>39</sup> and Sweany<sup>40</sup>. Sixty per cent of the veterans and 56 per cent of their teachers said that the teacher should "demonstrate jobs" while on the visits. Only 14 per cent of the veterans and 5 per cent of their

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<sup>37</sup>Sweany, op. cit., p. 14.

<sup>38</sup>Committee On Research In The Education Of Farm Veterans, op. cit., p. 66.

<sup>39</sup>Guiler, op. cit..

<sup>40</sup>Sweany, op. cit., p. 14.



teachers selected "supervised study" as a duty for the teacher to perform while on the farm.

### Planning Action During Visits

The Regional study<sup>41</sup>, previously referred to, revealed that 82.3 per cent of the teachers used the practice, "Help locate breeding stock and seed," and valued it at 1.50, while 73.5 per cent of the Michigan<sup>42</sup> teachers used the practice and valued it at 1.44. Another practice under this sub-heading that was included in the Regional study<sup>43</sup> was to "Promote demonstrations on the farms of class members." There were 62.2 per cent of the teachers of the Central Region who used the practice and they gave it a value rating of 1.37. Fifty-seven per cent of the Michigan teachers in the Moeckel study<sup>44</sup> used the previously listed practice and indicated an average value rating of 1.35.

The remainder of the sub-headings; Preparing Adult Students for Instruction, Evaluating Farm Practices During Visits, and Evaluating Instructional Practices Used by the Teacher,

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<sup>41</sup>Byram, et al., op. cit...

<sup>42</sup>Moeckel, op. cit...

<sup>43</sup>Byram, et al., op. cit...

<sup>44</sup>Moeckel, op. cit...

were not found to have been studied previously in the research literature.

#### Related Studies Concerning On-Farm Instruction

There are several research studies that were not directly related to the phase of on-farm instruction covered by this study but, nevertheless, do have some background value.

In a 1959 study of summer activities of Michigan teachers from twenty-five schools<sup>45</sup>, it was concluded that 12.1 hours per week or 28.4 per cent of the teacher's summer time is devoted to on-farm instruction. This includes on-farm instruction for high school, young-farmer, and adult-farmer students. It was determined by an estimation by the same teachers prior to the study that they had spent 43.3 per cent of their summer time with on-farm instruction. Therefore, the teachers had estimated that they had spent 14.9 per cent more of their summer time in on-farm instruction the previous year than their records actually revealed that they had used the following year.

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<sup>45</sup>Summer Activities Of Vocational Agricultural Programs In Michigan--1959, Publication No. 505, (Lansing, Michigan: The Department Of Public Instruction, 1960), p. 12.

Garner<sup>46</sup> concluded from a study of the on-farm instruction programs of high school students in Michigan that thirteen teachers with "more effective programs of supervised farming" used the following practices to a "significantly greater number" than did thirteen teachers with "less effective programs."

1. Visited individual supervised farming programs when or soon after the classroom instruction was provided to insure that it would be put to use.
2. Made farm visits regularly after school.
3. Had a part of the regular school day set aside for farm visits.
4. Made farm visits regularly on Saturdays.

Even though these four conclusions were from a study which involved only high school students, these same statements would probably apply to adult farmers also. The teacher of adult farmers, to be effective, will want to follow up instruction, visit regularly, and have time scheduled for it.

In a study reported by Hoffer<sup>47</sup>

It was found that participation on an individual basis is positively associated with participation in groups. Hence, these types of participation are supplementary rather than competitive.

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<sup>46</sup>Raymond A. Garner, "Practices Of Teachers Of Varying Proficiency In Conducting Programs Of Supervised Farming In Vocational Agriculture In Michigan", (unpublished Doctor's thesis, Library, Michigan State College; East Lansing, Michigan, 1951), p. 321-3.

<sup>47</sup>Charles R. Hoffer, Selected Social Factors Affecting Participation Of Farmers In Agricultural Extension Work, Special Bulletin 331, (East Lansing, Michigan: Michigan State College, Agricultural Experiment Station, Section of Sociology, June, 1944), p. 36.

Some agricultural educators may wonder if they should be too liberal with their time for individual instruction since this might lessen participation in group activities. Hoffer's study claims the two to be complimentary, however.

Considerable research has been done by agricultural educators and sociologists on the "Diffusion Process."<sup>48</sup> This is the process by which farm people accept new ideas. The process has been separated into the stages of awareness, interest, evaluation, trial, and adoption. At the trial stage farmers need to know how, when, how much, etc.. The best teaching method for such a situation is on-farm instruction. Of course the teacher might also provide on-farm instruction at other stages of the diffusion process, but surely it must be provided for most effective learning at the trial stage. Bundy<sup>49</sup>, in an article about the diffusion process, puts it this way, "Many members of our adult and young farmer classes are not going to try out practices and adopt them unless we give them assistance on their farms."

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<sup>48</sup>George M. Beal and Joe M. Bohlen, The Diffusion Process, Special Report No. 18, (Ames, Iowa: Iowa State College, Agricultural Extension Service, March 1957), p. 2.

<sup>49</sup>C. E. Bundy, "How Farmers Adopt New Practices", Agricultural Education Magazine, 33:2, August, 1960.

Dickerson found in a study reported by Agrisearch<sup>50</sup> that, "Normally, farmers rely on a number of sources for their information on new ideas in farming," and that, "Generally, low-income farmers are reached more effectively through personal channels and sources." Both conclusions suggest the importance of adequate on-farm instruction as a part of an adult-farmer course.

Wilson<sup>51</sup> found that when Ohio teachers were asked what helped in maintaining attendance in adult programs they rated "interesting meetings" as most valuable and "farm visits by instructor" next in value.

Sweany<sup>52</sup> reports in the Michigan veterans study that veterans rated of "much" value the classroom instruction at 82 per cent, the on-farm instruction at 72 per cent, and the small group instruction at 42 per cent. Their teachers rated the same methods of instruction at 79 per cent, 90 per cent, and 37 per cent, respectively. When asked where instruction should be given<sup>53</sup>, 88 per cent of the veterans and 94 per cent of

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<sup>50</sup>National Project In Agricultural Communications, "Wonder Where Your Message Went?", Agrisearch, (East Lansing, Michigan: Michigan State University, Wells Hall, October, 1956), 2:3.

<sup>51</sup>Richard H. Wilson, "The Program For Adult Farmers In Vocational Agriculture In Ohio", (unpublished Master of Arts thesis, Library, The Ohio State University: Columbus, Ohio, 1951), p. 16.

<sup>52</sup>Sweany, op. cit., p. 4.

<sup>53</sup>Ibid., p. 16.

their teachers said "Farm and Classroom." Only 8 per cent of the veterans and 3 per cent of their teachers said just on the farm. Only 3 per cent of both groups said just in the classroom.

The Michigan Township Extension Experiment of the Co-operative Extension Service<sup>54</sup> proved farmers to be overwhelmingly in favor of "Farm visits by the agent" as indicated by 56 per cent of the farmers surveyed. The next closest methods in farmer preference were "Personal contacts" at 9 per cent and "Circular letters and cards" at 9 per cent.

#### Summary of the Chapter

In the review of literature, nineteen practices that were included in this study were found to have been studied previously. Most of these were found in the study of the Central Region on practices used in adult-farmer courses. Fifteen additional studies are referred to in this chapter. Other references were reviewed and are listed in the bibliography.

In summary, a review of the literature revealed only a limited amount of research on the use of and evaluation of practices of on-farm instruction of adult-farmer students.

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<sup>54</sup>James Nielson and William Crosswhite, The Michigan Township Extension Experiment, Technical Bulletin 266, (East Lansing, Michigan: Michigan State University, Agricultural Experiment Station, Department of Agricultural Economics, February, 1958), p. 26.



## CHAPTER III

### PROCEDURE OF THE STUDY

The procedure for collecting data from the Michigan teachers of vocational agriculture concerning their practices of on-farm instruction of adult farmers is described in this chapter. The methods employed to collect similar information from a sample of outstanding teachers of vocational agriculture from thirteen states of the Central Region are also explained. This chapter includes an explanation of how the data were analyzed once they were obtained. Finally, the procedures are presented which were used to formulate, conduct, and analyze the phase of the study dealing with promising practices of individual on-farm instruction of adult farmers.

#### Collection of Data on Practices Being Used in Individual On-Farm Instruction of Adult Farmers

Two groups of teachers were included in the study. They were the Michigan teachers of adult-farmer courses for 1957-58 and a selected sample of outstanding teachers of adult-farmer courses from each of the thirteen states of the Central Region. These outstanding teachers from the states of the Central Region were surveyed for three reasons. First, it was hoped that more

practices of individual on-farm instruction of adult farmers could be identified, especially some that Michigan teachers may not have used. In the second place, an answer to the question was sought as to whether certain practices were being used more or less frequently by the samples of teachers from the various states than by the Michigan teachers. Finally, the outstanding teachers were surveyed to determine if there would be any divergence in the evaluation of effectiveness of practices between the composite sample of outstanding teachers from states of the Central Region and the Michigan teachers. The following section describes in detail the procedure of this phase of the study.

Formulation of the checklist. The collection of data was accomplished through the use of a checklist of 125 practices of "Individual On-Farm Instruction For Adult Farmers" (Appendix I). The form of the checklist was partially patterned after the one used in a previous study of practices used in adult-farmer courses in Michigan<sup>55</sup> and in the Central Region. Several practices used in the checklist were adapted from the aforementioned form. Another source for the practices was a teacher self-evaluation form for on-farm instruction of high school students by

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<sup>55</sup>Ibid., p. 92-8.



Scarborough and Coggin<sup>56</sup>. This form contained twenty-one practices, ten of which were adaptable to this study. Phipps<sup>57</sup> text provided several ideas for practices in the checklist. A few suggestions were also obtained from Ekstrom and McClelland<sup>58</sup>. Several practices on the checklist were developed from suggestions acquired during interviews with members of the guidance committee, state supervisors from Michigan, teacher trainers from Michigan, and experienced Michigan teachers. The remainder of the practices were developed from personal experience.

The following criteria were used as guidelines while formulating the checklist of practices:

1. The practice can be clearly explained in writing.
2. The practice can be briefly explained in a checklist.
3. The practice is efficient from the standpoint of the ratio of teacher time to student learning.
4. The practice is known to be effective, or is judged by the writer to be potentially effective.

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<sup>56</sup>C. C. Scarborough and J. K. Coggin, "More Effective Teaching Through On-the-farm Instruction", Agricultural Education Magazine, 27: 196-7, March, 1955.

<sup>57</sup>Lloyd J. Phipps, Successful Practices In Adult Farmer Education, (Danville, Illinois: Interstate Printers and Publishers, Inc., 1954) p. 232-247.

<sup>58</sup>George F. Ekstrom and John B. McClelland, Adult Education in Vocational Agriculture, (Danville, Illinois: The Interstate Printers and Publishers, Inc., 1952) p. 117-8 and 408-416.

5. The practice does not require special training to perform beyond that training which a teacher of vocational agriculture has normally received.

After considerable rewording and condensation, the practices were arranged under the following sub-headings:

- A. Organizing for Visits
- B. Scheduling Farm Visits
- C. Preparing Adult Student for Instruction
- D. Locating Problems During Visits
- E. Instructing During Farm Visits
- F. Planning Action During Visits
- G. Evaluating Farm Practices During Visits
- H. Evaluating Instructional Practices Used by the Teacher.

These sub-headings were selected and arranged on the basis of good teaching procedure. Practically no ideas were found in the literature concerning the last two sub-headings of the checklist on evaluation. After the checklist had been pre-tested it was reproduced by the off-set printing process.

In order to provide some basis for evaluating the answers given by the teachers on the checklist, the number of years of experience in teaching adult farmers and the total number of on-farm instruction visits provided to adult farmers per year were requested.

Pre-testing the checklist. The checklist was revised several times, after which it was finally duplicated for a pre-test with six teachers. All of these teachers had taught adult or young-farmer courses at some time in their teaching career but had not taught an adult-farmer course in 1957-58. The teachers were asked to evaluate the wording, clarity of directions given, and the amount of time required to finish the checklist. They were also asked to suggest other practices to be added.

The checklists were sent to the teachers by mail. The average time required to complete the checklist was approximately thirty-seven minutes. Three new practices were added and one practice was revised. The remainder of the changes were minor as far as the list of practices was concerned. Although only a few changes and additions were made it is recognized that the list of practices of on-farm instruction is far from being complete and could probably be expanded by others.

Michigan teachers who were surveyed. Checklists were sent to the entire group of teachers of vocational agriculture who indicated to the State Office of Vocational Education at the beginning of the 1957-58 school year that they were planning to conduct an adult-farmer course. A list of one hundred forty-eight teachers from one hundred forty-six schools was prepared by the agricultural staff of the Office of Vocational Education,



Department of Public Instruction, Lansing, Michigan.

Selection of outstanding teachers of the Central Region.

These teachers were selected by the head state supervisor from each of the states of the Central Region. Each head state supervisor was requested by letter to send the names of five teachers of adult-farmer courses whom he or his staff considered to be outstanding in the on-farm instructional phase of the adult-farmer work. To provide assistance to the head state supervisor in selecting the names and to provide for some uniformity of the samples, the following criteria were suggested, provided the information was available:

1. The number of approved farm practices adopted by the adult-farmer students is outstanding.
2. The observations made and reports received by the state staff, concerning the activities in on-farm instruction for adult-farmer students, show the teachers to be outstanding.
3. The number of visits made to adult students and/or the miles traveled by the teachers are considered adequate.
4. Adequate time has been provided in the teachers' school schedules in which to conduct on-farm instruction for adults.

A copy of the letter to the head state supervisors will be found in Appendix A. Replies were received from all of the states, which included Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.





Distribution and return of the checklists by Michigan teachers. The checklists were distributed by letter on May 12, 1958. A copy of the cover letter is shown in Appendix B. This date was selected so that teachers would be finished with many seasonal activities but would not have become involved in the activities that accompany the end of the school year. The survey was also planned for this date because most of the adult courses would be finished and the fiscal year would be nearly past, yet the teachers would still be located at their respective schools regardless of their plans for the next school year.

The checklists were given code numbers so that the information could be kept confidential. A stamped, self-addressed envelope was also sent.

There were 138 checklists sent to teachers who were eligible to participate. Nine names were eliminated because it was learned definitely that they were not teaching an adult-farmer course in 1957-58. The investigator's name was also omitted. Before the end of May, 1958, fifty-seven replies, or 41.9 per cent of the checklists, had been returned. A follow-up letter was sent, June 9, to the teachers who had not replied. The number of returns received in June was twenty-six or 18.8 per cent. During July, seventeen replies or 12.3 per cent of the checklists were returned. A second follow-up letter was sent on July 15th. Several teachers



who had not returned the checklists by the last week in July were contacted personally during the state conference for teachers of vocational agriculture. The final replies amounted to 108 for a total of 78.2 per cent of the checklists being returned.

Distribution and return of checklists by teachers of the Central Region. The checklists were sent to the selected teachers of the Central Region in a similar manner as to the teachers in Michigan. The cover letter which accompanied the checklist is shown in Appendix C. Checklists were sent to a total of seventy outstanding teachers from the thirteen states in the Region. As was stated before, each head state supervisor was asked to send names of five outstanding teachers. However, the supervisor from Illinois sent names of seven teachers, and the supervisor from Michigan sent names of eight teachers. Since all teachers were sent checklist surveys, there were more than five involved from these two states.

A follow-up letter was sent to those who had not replied by July 7, 1958. A total of fifty-six teachers replied, for 80.0 per cent of the checklists which were sent being returned. The number of teachers replying from each state was as follows:

Illinois--seven, Indiana--three, Iowa--four, Kansas--three, Kentucky--five, Michigan--eight, Minnesota--five, Missouri--four, Nebraska--two, North Dakota--two, Ohio--five, South Dakota--three, and Wisconsin--five.



Information about the Michigan teachers. Additional information was acquired about the Michigan teachers in the study from the Office of Vocational Education of the Department of Public Instruction. The state form No. 243 entitled, "Supplementary Information on Departments of Vocational Agriculture," and the final report form No. 260 entitled, "Annual Financial And Statistical Report On Agricultural Education," were sources for this information. The specific information included the number of teachers in the department, the state plan for scheduling all-day classes, the high school schedule, the number of adult and young-farmer classes, the adult-farmer course subjects taught, the high school and adult-farmer enrollments, the number of adult-farmer meetings held and the teacher's salary for the adult-farmer course. The main purpose for collecting this information was to determine any correlation between these factors and the information collected by the checklist survey.

Summarizing and analyzing the data. The data from the checklists and from the state forms mentioned above were placed on I.B.M. cards. The electronic sorter-counter I.B.M. machine was then used to tabulate the totals of the various practices and other information. This also made possible a reasonably convenient cross-tabulation of certain items with the practices used and the teachers' evaluation of those practices. For instance, the I.B.M. cards were machine sorted and counted by various levels

of years of experience in teaching adult-farmer courses. It was then possible to analyze other information within these levels, such as the total number of visits made to all adult-farmer students per year according to the years of experience of the teachers.

These types of data were then statistically analyzed to determine differences and correlations between specific practices and information. The promising practices to be used for the second phase of this study, to be explained later, were selected by the chi square statistical method. Those practices from the checklist that had been used more and evaluated higher to a significant degree by the outstanding teachers as compared with the Michigan teachers were considered to be promising practices. Correlations were calculated on the promising practices to determine any significant differences between certain factors in the study.

For the purpose of a more effective presentation of the results of the data collected with the checklist, a composite score was calculated for each on-farm instruction practice. This made it possible to list the practices under each sub-heading of the checklist according to the average evaluation rate of the teachers. The composite scores were calculated in the following manner: a. Teachers checking "Never Used" were not counted, b. Practices that teachers checked as "Use Frequently"

and evaluated as "Effective" were counted and given a value score of four, c. Practices that teachers checked as "Use Frequently" and evaluated as "Partly Effective" were counted and given a value of two, d. Practices evaluated as "Not Effective" were counted but a zero value was given them, e. Practices that teachers were "Uncertain" about were not counted nor given any value score, f. Practices checked as "Use Occasionally" and evaluated as "Effective" were given a value of three, g. Practices checked as "Use Occasionally" and evaluated as "Partly Effective" were valued at one, and h. Practices that the teachers marked as "Discontinued Using" were not counted nor did they have a value rating. The per cent of teachers using each practice was also calculated and will be presented with the composite score. All responses were used for this percentage figure except those checked under the columns of "Never Used" and "Discontinued Using."

#### Collection of Data on Promising Practices

The purpose of this phase of the study was to determine, on a demonstrational basis, the value of certain less frequently used practices of individual on-farm instruction to Michigan teachers of adult-farmer courses.

Ten practices were included in this part of the study. Nine of these were taken from the checklist. The tenth practice,



"Surveying adult farmers during class to determine their viewpoints concerning farm visits," was not in the checklist.

Selection of the promising practices. The practices were designated as "promising practices" because of the significant difference in their more frequent use and the higher evaluation of their effectiveness between outstanding teachers from the states of the Central Region and the Michigan teachers.

These practices were selected from the results of the checklist survey after the non-return teachers were sent the final follow-up letter in early July and had been given sufficient time to respond. Since this second phase of the study needed to be initiated before the coming school year, it was decided that as many contacts would be made as possible with the teachers during the summer conference of teachers of vocational agriculture. Therefore, just a few days before the conference the checklists of the outstanding teachers and the Michigan teachers were totaled and compared in order to select the promising practices. The chi square statistical method, with two degrees of freedom, was used to determine which practices were used to a significantly larger extent by the outstanding teachers and evaluated to be more effective, as compared with the Michigan teachers.

For purposes of the statistical comparison, the number of teachers from the two groups who had "never used" the practice

were compared; the number of teachers who had used the practice either "frequently" or "occasionally" and had evaluated it as "effective" were compared; and the remainder of the responses except "discontinued using" were combined and compared. Thirty-eight practices were significantly different when comparing the summary of the checklist survey of the Michigan teachers with the outstanding teachers of the Central Region. All of these practices had been used by a larger percentage of the outstanding teachers and had been evaluated at a higher level of effectiveness by them than by the Michigan teachers.

The next step was to select from this list of thirty-eight practices that showed a significant difference at the one per cent or five per cent level those which met the following requirements:

1. The practices were used "frequently" by fewer than three-eighths of the Michigan teachers. However, those teachers who had used the practices had evaluated them as "effective."

2. The practices were used by two-thirds or more of the outstanding teachers from the Central Region and were evaluated by two-thirds or more of those teachers who used the practices to be "effective."

3. The practices would not require new or unusual teaching skills.

4. The practices were easily defined and described.

5. The practices were of a relatively specific nature so the teacher could objectively recall their use and effect on the adult farmer.

The first and second requirements were selected at that particular level because of the nature of this phase of the study. It was desirable to select practices which were being used and evaluated to be "effective" by a reasonably large portion of the outstanding teachers, yet were not being used "frequently" by a very large portion of the Michigan teachers, although it was important that those Michigan teachers who had used the practices had found them "effective." It was also believed desirable to allow the Michigan teachers a large list of promising practices from which to choose their demonstrational practices. However, if this list was too long, then the number of teachers using each promising practice on a demonstrational basis and reporting on its' value might be too small.

Twenty practices met the five requirements listed above. Of the eighteen that were eliminated, three practices had been used frequently by the Michigan teachers. The remainder of the practices had not been used by two-thirds of the outstanding teachers or had not been evaluated as being "effective" by two-thirds of those who used the practice, or both. All of the twenty that were selected were considered to have met the third, fourth, and fifth requirements listed above.

Selection of the promising practices by the teachers.

A copy of twenty potentially promising practices (explained in the previous paragraph) was shown to a large number of teachers at the summer conference to determine their reaction to the practices. They were asked to indicate which practices they had not used or had used infrequently and would be interested in trying during the coming year on a demonstrational basis. During these interviews, the teachers were asked if they would be interested in trying the additional practice to "Survey adult farmers during class to determine their viewpoints concerning farm visits." Forty-three teachers, or 95.6 per cent of those interviewed expressed an interest in this practice. Each teacher was encouraged to select three or four practices. After the conference the teacher selections for each practice were tabulated. With this information about the interests of teachers, ten of the more popular practices were selected for the final list of promising practices which were used on a demonstrational basis.

Selection of teachers to try out the promising practices.

Forty-five teachers were interviewed during the summer conference. Forty-nine teachers who were not interviewed but who had returned the checklist survey were contacted by mail and invited to participate in this second phase of the study. A return postcard was enclosed upon which they were to make a selection of the practices

they would like to try on a demonstrational basis during the coming school year. Thirty-seven teachers or 75.5 per cent of them replied. Most of the remainder of those teachers who returned the checklist but who were not invited to participate in the promising practices demonstration were those who had changed departments, left vocational agriculture teaching or did not intend to conduct adult-farmer courses in 1958-59. There were ten teachers who were contacted and agreed to participate in the demonstrational study but who had not returned a checklist because they had not taught adult-farmer courses in 1957-58.

Assistance given to the teachers. To aid the teachers in performing these promising practices and to provide some uniformity, a list of suggestions on how to perform the practices was sent to each teacher at the beginning of the 1958-59 school year. A copy of this material is found in Appendix D. The practices that each teacher had selected were checked on the list. The blank columns were for the purpose of keeping records on each practice during the year so that the teacher's evaluation would be more accurate at the end of the year.

Later in the fall another letter was sent to those teachers who had agreed to try some of the promising practices. There were two purposes for sending this second letter. It was to serve as a reminder to the teachers if they had forgotten or procrastinated.

The other purpose was to enclose a suggested survey form

(Appendix E) which could be, with minor adaptations, duplicated for use in the adult-farmer classes to perform the promising practice of surveying adult farmers concerning viewpoints on farm visits.

Evaluation of the promising practices by the teachers.

The forms and a letter explaining the evaluation were sent to the teachers on May 28, 1959. By this date it was thought that the teachers would have had time enough to perform most of the on-farm instruction for adult farmers that they would be able to do within the fiscal year of July 1 to June 30, 1959, except for the month of June. The forms were not sent later because some teachers who would be changing schools might not be reached at the school or would not possess the interest to reply. A copy of the form is shown in Appendix F. The questions asked and the advantages of the promising practices that were suggested were standardized to simplify the reporting by teachers. If a special form had been developed for each practice, it would have required extra copies and a second contact by mail for the teachers who changed or added promising practices that they demonstrated during the year without reporting their change of plans. It was thought that this would have reduced the number of teachers who would have returned the evaluations.

A form was sent for each promising practice that the teacher



had selected at the beginning of the school year. The teachers were encouraged to report on other promising practices if they had changed practices earlier in the year. Eighty-two teachers were sent the evaluation material. Sixty-nine, or 84.0 per cent, returned the evaluation forms. Replies from nine teachers were not counted because they had no adult course or because they had not used the promising practices sufficiently to evaluate them. The promising practices were summarized and statistically analyzed by Student's "t" statistic of distribution.

#### Summary of the Chapter

This chapter explains the details of the procedure of the study and could be summarized by the following points:

1. A checklist of 125 individual on-farm instruction practices was formulated.
2. The checklist was sent to all Michigan teachers of adult-farmer courses for the 1957-58 school year. There were 138 teachers involved. One hundred and eight checklists were returned for a 78.2 per cent response, of which one hundred were usable.
3. The checklist was sent to seventy outstanding teachers of adult-farmer courses from thirteen Central Region states. Fifty-six checklists were returned for an 80.0 per cent response, of which fifty-three were usable.



4. The data from the checklists were placed on I.B.M. cards and comparisons were made between the outstanding teachers' and the Michigan teachers' practices of on-farm instruction.

5. From this comparison, ten promising practices were selected and tried out on a demonstrational basis during the 1958-59 school year by sixty teachers who reported their evaluation of the promising practices.

## CHAPTER IV

### RESULTS OF THE STUDY OF INDIVIDUAL ON-FARM INSTRUCTION PRACTICES

The individual on-farm instruction practices which were used by Michigan teachers of vocational agriculture in their adult-farmer courses during the 1957-58 year will be reported and summarized in the first part of this chapter. The next part will report the results of the survey of the same practices by outstanding teachers of vocational agriculture in the Central Region. The final part of this chapter will compare the practices of the Michigan teachers with the practices of the teachers of the Central Region.

#### Practices Used by Michigan Teachers

In this section, the data will be presented which were obtained from the Michigan teachers through the checklist survey. The practices will be discussed under the same sub-headings as were in the checklist. A composite list of frequently used practices receiving a high evaluation of effectiveness will be included.

#### Information concerning Michigan departments in the study.

The following information was gathered concerning the one hundred

departments of vocational agriculture whose teachers participated in the study. The information included the number of teachers in the department, the type of schedule plan under which the school was operating for vocational reimbursement, the high school class and non-class schedule of each teacher, the enrollment of high school students of vocational agriculture, the number of young and adult-farmer classes held, the subject of the adult-farmer courses, the adult-farmer enrollment and the number of adult-farmer class meetings. A brief summary of each factor will follow.

The number of teachers per department of vocational agriculture was as follows: one-half teacher or less—two departments, from one-half to one teacher—eighty-four departments, from one to one and one-half teachers—five departments, and over one and one-half teachers—six departments. The information was not available from three departments.

A summary of the type of schedule plan under which the departments of vocational agriculture were scheduling their classes revealed that twenty-five departments were under Plan A, four were under Plan B, five were under Plan C, forty-one were under Plan D, none was under Plan E, ten were under Plan F, one was under Plan G, and eight departments were under Plan H. This information was not available for six departments. Appendix G describes the above mentioned plans.



The number and type of high school classes that the teachers taught during the school day are presented in Table II. The class and non-class parts of the teachers' schedules were tabulated separately for simplicity. The non-class schedules are summarized in Table III.

TABLE II

HIGH SCHOOL CLASS SCHEDULES OF MICHIGAN DEPARTMENTS WITH  
TEACHERS OF ADULT-FARMER COURSES DURING 1957-58

| Type and number of<br>high school classes                | Number of<br>Departments | Per cent of<br>Departments |
|----------------------------------------------------------|--------------------------|----------------------------|
| Vocational agriculture—2                                 | 2                        | 2.0                        |
| Vocational agriculture—3                                 | 13                       | 13.3                       |
| Vocational agriculture—4 or more                         | 34                       | 34.7                       |
| Vocational agriculture—3 or more<br>and other subjects—1 | 26                       | 26.5                       |
| Vocational agriculture—2 or less<br>and other subjects—2 | 5                        | 5.1                        |
| Vocational agriculture—3<br>and other subjects—2         | 11                       | 11.2                       |
| Vocational agriculture—2 or less<br>and other subjects—3 | 4                        | 4.1                        |
| Others                                                   | 3                        | 3.1                        |
| Total departments reporting                              | 98                       | 100.0                      |

TABLE III

**NON-CLASS HIGH SCHOOL SCHEDULES OF MICHIGAN DEPARTMENTS  
WITH TEACHERS OF ADULT-FARMER COURSES DURING 1957-58**

| Type and number of non-class activities scheduled                                     | Number of departments | Per cent of departments |
|---------------------------------------------------------------------------------------|-----------------------|-------------------------|
| Conference period--1                                                                  | 3                     | 3.2                     |
| On-farm instruction period--1                                                         | 2                     | 2.1                     |
| Conference period--1 and on-farm instruction period--1                                | 15                    | 15.8                    |
| Conference period--1 and adult or young-farmer visit period--1                        | 41                    | 43.1                    |
| On-farm instruction period--1 and adult or young-farmer visit period--1               | 8                     | 8.4                     |
| Conference period--1, on-farm instruction period--1, and adult or young-farmer period | 18                    | 18.9                    |
| Conference period--1 and adult or young-farmer periods--2                             | 5                     | 5.3                     |
| Others                                                                                | 3                     | 3.2                     |
| Total departments reporting                                                           | 95                    | 100.0                   |

A summary of enrollments of high school students of vocational agriculture in the departments manned by the teachers in the study showed three departments with twenty or less students, twelve with twenty-one to thirty, twenty-three with thirty-one to forty, twenty-three with forty-one to fifty, nineteen with fifty-one to sixty, eleven with sixty-one to seventy, and seven depart-



ments with seventy-one or more high school students. Ninety-eight departments reported this information.

The total number of adult and young-farmer courses offered per department were: fifty-five departments with one adult-farmer course, eight with two adult-farmer courses, one with three adult-farmer courses, twenty-four with one adult and one young-farmer course, and three departments with two adult and one young-farmer course taught during 1957-58. A total of ninety-one departments reported this information.

A summary of the subjects of the adult farmer courses of the teachers in the study is presented in Table IV.

TABLE IV  
SUBJECTS OF ADULT-FARMER COURSES TAUGHT BY  
MICHIGAN TEACHERS DURING 1957-58

| Subjects of Course          | Number of departments | Per cent of departments |
|-----------------------------|-----------------------|-------------------------|
| Farm Management             | 40                    | 43.9                    |
| Farm Mechanics              | 21                    | 23.0                    |
| Crops                       | 4                     | 4.5                     |
| Soils                       | 5                     | 5.5                     |
| Dairy                       | 3                     | 3.3                     |
| Others                      | 18                    | 19.8                    |
| Total departments reporting | 91                    | 100.0                   |





The fraction of salary received by the teachers for teaching the adult-farmer courses was one-sixth or more by twenty-four teachers, and one-seventh or less by fifty-one teachers. Separate stipends were received by eight teachers amounting to one hundred and one dollars to two hundred dollars, three received over two hundred dollars, and five received one hundred dollars or less. Ninety-one departments provided this information.

The enrollment of adult and young-farmer students per department was ten or less in eight departments, eleven to twenty in forty-one departments, twenty-one to thirty in twenty-six departments, thirty-one to forty in nine departments and forty-one or more in seven departments. There were ninety-one departments reporting this information.

The number of class meetings per adult farmer course was ten for thirty-two departments, eleven or twelve for seventeen departments, thirteen or fourteen for six departments, fifteen or sixteen for eleven departments, seventeen or eighteen for thirteen departments and nineteen or more for twelve departments. This information was reported by ninety-one departments.

In summary, a typical department of vocational agriculture that participated in the checklist survey might be described by the median figures of the various factors just presented. This typical department would have one teacher, be under schedule Plan D, teach four high-school classes of vocational agriculture,



have one conference period and one adult or young-farmer period in its high-school schedule, have an enrollment of between thirty-one and fifty high-school students, offer one adult-farmer course in farm management, with the teacher receiving one-seventh or less of his salary for teaching adult farmers, having an adult-farmer enrollment of eleven to twenty students and offering ten class meetings per adult-farmer course.

Results of the checklist survey of Michigan teachers.

There were 138 checklists sent to Michigan teachers of vocational agriculture who had planned to teach adult-farmer courses during 1957-58. There were 108 or 78.2 per cent of the checklists returned. Eight of these were not used because it was definitely known that the teacher had not taught a course during 1957-58 or the checklist had not been properly completed. A list of the teachers who replied to the checklist is shown in Appendix H. The location of the teachers in the state is shown in Figure 1. The totals of the checklists are shown in Appendix I. The results of the survey of the practices will be presented in more detail under the eight sub-headings of the checklist later in this chapter.

Years of experience of the Michigan teachers. The years of experience of the Michigan teachers of vocational agriculture in adult-farmer courses was of interest in this study to detect any relationship between experience and the amount or character of the on-farm instruction given by those teachers. Table V presents the



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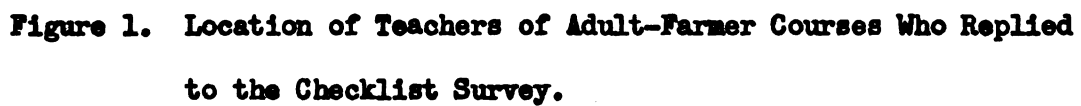


TABLE V  
YEARS OF EXPERIENCE IN TEACHING ADULT-FARMER COURSES  
BY MICHIGAN TEACHERS

| Years of experience in<br>teaching adult farmers | Number of<br>teachers | Per cent of<br>teachers |
|--------------------------------------------------|-----------------------|-------------------------|
| 1 to 2 years                                     | 25                    | 32.9                    |
| 3 to 4 "                                         | 15                    | 19.7                    |
| 5 to 6 "                                         | 13                    | 17.1                    |
| 7 to 8 "                                         | 9                     | 11.8                    |
| 9 to 10 "                                        | 3                     | 4.0                     |
| 11 to 12 "                                       | 0                     | 0                       |
| 13 to 14 "                                       | 3                     | 4.0                     |
| 15 to 16 "                                       | 2                     | 2.6                     |
| 17 or more years                                 | 6                     | 7.9                     |
| Total teachers reporting                         | 76                    | 100.0                   |

years of experience in teaching adult-farmer courses. There was 52.6 per cent of the teachers with less than five years of experience. The average years of experience in conducting adult-farmer courses was five and nine-tenths years. The correlation of other factors with experience in teaching adult farmers will be presented in later sections of this chapter.

Adult-farmer on-farm instruction visits conducted per year

by Michigan teachers. The total number of on-farm instruction visits made to the adult farmers during a year, as estimated by each teacher in the study, ranged from eight to three-hundred, with an average of fifty-six and three-tenths. Table VI shows how many farm visits the Michigan teachers conducted. The largest group of teachers, 34.6 per cent, conducted between sixteen and thirty on-farm instruction visits with adult farmers per year. Only 24.3 per cent of the teachers conducted over sixty on-farm instruction visits with adult farmers per year. There were 44.9 per cent of the teachers who had conducted fewer than thirty-one on-farm instruction visits to adult farmers per year.

The Pearson correlation statistic was used to calculate the relationship between the number of visits per year and the following factors: the years of experience in teaching adult-farmer courses, the number of teachers per department, the high school vocational agriculture enrollment, and the number of class meetings per adult-farmer course. There was no positive correlation between any of the factors and the number of on-farm instruction visits made to adult farmers per year.

Although not tested statistically, there was a tendency for more visits to be made by teachers who were on the state Plan D for class schedules, who had three high school vocational agriculture classes and no non-vocational classes, who taught both young and adult-farmer courses instead of only adult farmers, and who





TABLE VI

NUMBER OF ON-FARM INSTRUCTION VISITS MADE  
PER YEAR BY MICHIGAN TEACHERS OF ADULT FARMERS

| Number of Visits Conducted<br>Per Year | Number of<br>Teachers | Per cent of<br>Teachers |
|----------------------------------------|-----------------------|-------------------------|
| 15 or less visits                      | 8                     | 10.3                    |
| 16 to 30 "                             | 27                    | 34.6                    |
| 31 to 45 "                             | 12                    | 15.4                    |
| 46 to 60 "                             | 12                    | 15.4                    |
| 61 to 75 "                             | 3                     | 3.8                     |
| 76 to 90 "                             | 3                     | 3.8                     |
| 91 to 105 "                            | 7                     | 9.0                     |
| 106 to 120 "                           | 0                     | 0                       |
| 121 to 135 "                           | 0                     | 0                       |
| 136 or over "                          | 6                     | 7.7                     |
| Total teachers reporting               | 78                    | 100.0                   |

taught adult-farmer courses of a non-mechanical subject, in contrast to farm mechanics.

In conclusion, an average of fifty-six and three-tenths on-farm instruction visits were made by the Michigan teachers to their adult farmers. There was an average of approximately twenty-four adult farmers per teacher. This means that the adult



farmers were visited on the average about two and three-tenths times per year.

Organizing for visits. In this section will be presented the data collected in the first sub-heading of the checklist. The practices are concerned with the organization of the adult-farmer class as a group as well as the organization of the teacher's materials before actually approaching individual adult farmers. The results from the Michigan teachers of adult-farmer courses are shown in Table VII. The practices are arranged according to their composite scores. The method of calculating the composite score is found in Chapter III. The practices are numbered to correspond with the order on the checklist.

Although a certain practice may have received a low composite score it is possible that it may be the only known technique to use in performing an essential step in on-farm instruction, or perhaps the process of performing the technique needs to be further developed.

The first three practices listed in Table VII received high composite scores and were used by a large percentage of the teachers, which indicates that they are quite important practices. Those practices were to "Wear less formal clothing for farm visits," "Collect equipment to be carried in car," and "Limit most visits to one major purpose."



TABLE VII

PRACTICES OF "ORGANIZING FOR VISITS" WHICH WERE USED BY  
MICHIGAN TEACHERS OF ADULT-FARMERS IN ON-FARM INSTRUCTION  
DURING 1957-58

| Practices                                                                              | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|----------------------------------------------------------------------------------------|--------------------|------------------------------------|
| 6. Wear less formal clothing for farm visits                                           | 3.67               | 93.8                               |
| 4. Collect equipment (soil sampler, test kits, etc.) to be carried in the car          | 3.25               | 82.3                               |
| 9. Limit most visits to one major purpose                                              | 3.04               | 81.7                               |
| 3. Collect a small file of pertinent materials to be carried in car                    | 2.97               | 67.4                               |
| 5. Review recorded information about adult student before visiting                     | 2.82               | 69.3                               |
| 7. Try to overcome the disappointments of previous unsuccessful visits the same day    | 2.69               | 50.6                               |
| 2. Make frequent offers in classes to give on-farm instruction                         | 2.59               | 85.6                               |
| 1. Explain purposes of farm visits during adult classes                                | 2.49               | 70.4                               |
| 8. Try to overcome the disappointments of previous unsuccessful visits with same adult | 2.48               | 62.2                               |
| Average                                                                                | 2.89               | 73.7                               |



Scheduling farm visits. The second sub-heading on the checklist contained twenty-five practices concerned with the arranging of visits with the adult-farmer students, timing of the visits, frequency of the visits and deciding when to visit a certain adult farmer. The average composite score of the practices and the percentage of teachers who used the practice appear in Table VIII.

Several of the practices in this section received a high average composite score and had been used by a large percentage of the teachers. Some of those practices were: "Make at least one visit during summer," "Avoid visiting during days of important farm work," "Have one or more periods in school schedule specified for adult-student visits," "Visit adult students as frequently as their needs require," and "Plan most visits shorter than an hour long."

Preparing adult student for instruction. This section of the checklist was recognized by the teachers as containing some of the more effective practices of the checklist. Of the sixteen practices under this sub-heading, ten received three or more on the composite score. The average composite score was 3.13 and the percentage of teachers using the practices on the average was 89.8. Both of these averages were the highest achieved by the practices used under any of the sub-headings in the checklist. The high usage and value score of these practices



TABLE VIII

PRACTICES OF "SCHEDULING FARM VISITS" WHICH WERE USED BY MICHIGAN  
TEACHERS OF ADULT-FARMERS IN ON-FARM INSTRUCTION DURING 1957-58

| Practices                                                                                | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| 12. Make at least one visit during summer                                                | 3.47               | 81.6                               |
| 15. Avoid visiting during days of<br>important farm work                                 | 3.27               | 79.1                               |
| 16. Have one or more periods in school<br>schedule specified for adult student<br>visits | 3.27               | 68.8                               |
| 10. Visit adult students as frequently<br>as their needs require                         | 3.26               | 89.5                               |
| 23. Plan most visits shorter than an<br>hour long                                        | 3.19               | 81.7                               |
| 14. Visit at a crucial time during<br>adoption of a farm practice                        | 3.13               | 84.5                               |
| 13. Make farm visits between class<br>meetings                                           | 3.01               | 73.4                               |
| 22. Schedule visit after school hours                                                    | 2.96               | 92.4                               |
| 5. Visit, when requested, those farmers<br>who have not previously attended<br>classes   | 2.96               | 85.3                               |
| 19. Schedule part of every school day<br>to visit adult students                         | 2.95               | 23.3                               |
| 20. Schedule visit to adult student on<br>same trip as a high school student             | 2.72               | 81.3                               |
| 8. Usually visit adult students quarterly                                                | 2.70               | 41.1                               |
| 6. Maintain a list of potential farm<br>visits                                           | 2.69               | 58.5                               |



TABLE VIII CONCLUDED

PRACTICES OF "SCHEDULING FARM VISITS" WHICH WERE USED BY MICHIGAN  
TEACHERS OF ADULT-FARMERS IN ON-FARM INSTRUCTION DURING 1957-58

| Practices                                                                        | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|----------------------------------------------------------------------------------|--------------------|------------------------------------|
| 24. Notify (phone, card) adult student<br>before visit is made                   | 2.69               | 38.5                               |
| 18. Schedule part of 3 or more school<br>days per week to visit adult students   | 2.67               | 10.0                               |
| 7. Usually visit adult students once<br>a year                                   | 2.61               | 42.5                               |
| 1. Arrange visits during adult class                                             | 2.58               | 72.2                               |
| 9. Usually visit adult students once<br>a month                                  | 2.57               | 16.5                               |
| 17. Schedule part of 1 or 2 school days<br>per week to visit adult students      | 2.42               | 28.0                               |
| 25. Arrange for next visit before<br>leaving farm                                | 2.39               | 45.8                               |
| 3. Encourage adult students to request<br>visits by phone, mail, etc.            | 2.27               | 73.7                               |
| 2. Arrange visits during class meetings<br>through approved practices check list | 2.19               | 16.8                               |
| 21. Schedule visit early in the morning<br>before school starts                  | 2.15               | 13.4                               |
| 4. Provide on-farm instruction to for-<br>mer adult students, only upon request  | 2.13               | 36.6                               |
| 11. Visit adult student about as fre-<br>quently as he attends classes           | 1.91               | 12.6                               |
| Average                                                                          | 2.73               | 53.9                               |

1. The first step in the process of creating a new product is to identify a market need. This involves conducting market research to determine what consumers want and what problems they are trying to solve.

2. Once a market need has been identified, the next step is to develop a concept for a product that addresses that need. This involves brainstorming ideas and selecting the most promising one.

• The third step is to create a prototype of the product. This allows the designer to test the product and make any necessary adjustments before moving forward with production.

• The fourth step is to conduct a feasibility study. This involves evaluating the product's potential for success in the market, taking into account factors such as cost, competition, and distribution.

• The fifth step is to develop a business plan. This document outlines the company's goals, strategies, and financial projections, providing a roadmap for the product's development and launch.

• The sixth step is to secure funding. This involves pitching the product to potential investors or lenders, demonstrating its value and the team's ability to execute the plan.

• The seventh step is to manufacture the product. This involves sourcing materials, hiring workers, and setting up a production line.

• The eighth step is to launch the product. This involves marketing the product to the target audience, distributing it, and monitoring its performance in the market.

• The ninth step is to evaluate the product's success. This involves analyzing sales data, customer feedback, and market trends to determine if the product is meeting its goals.

• The tenth step is to iterate on the product. Based on the evaluation, the designer may need to make adjustments to the product or its marketing strategy to improve its performance.

• The eleventh step is to plan for the future. This involves identifying opportunities for growth, such as expanding into new markets or developing new products.

• The twelfth step is to maintain the product. This involves ongoing marketing, customer support, and product updates to ensure the product remains relevant and competitive in the market.

• The thirteenth step is to exit the market. This involves selling the product or the company, or simply discontinuing the product if it is no longer profitable.

• The fourteenth step is to reflect on the experience. This involves evaluating the overall process, identifying lessons learned, and applying those lessons to future product development efforts.

• The fifteenth step is to celebrate success. This involves acknowledging the team's hard work and the product's achievement in the market.

16. The final step in the process is to document the entire process. This involves creating a detailed record of all the steps, decisions, and outcomes, which can be used as a reference for future product development efforts.

17. The process of creating a new product is a complex and iterative one, requiring a combination of creativity, research, and execution. By following these steps, designers can increase their chances of creating a successful product that meets the needs of the market.

also show the importance that teachers place on the motivation step in the teaching process. These practices are summarized in Table IX.

Many of these practices, such as Numbers four, six, seven, eight, nine, ten, and eleven, are not easy to be objectively evaluated by the teacher himself. This kind of practice is performed, more or less, at the thought level of the teacher and cannot always be numerically determined by anyone other than the teacher himself.

Indeed, this type of practice may not be consciously performed by the teacher but may be performed as an established subconscious pattern of teaching. Therefore, it would be possible that the teachers might feel that these kinds of practices were being performed frequently and were effective, but if evaluated by the adult-farmer, an entirely different rating might be given.

The four highest practices in the value rating were very highly regarded by practically all of the teachers. Those practices were "Compliment adult student on what is well done," "Use technical terms which are adjusted to adult student's level of understanding," "Avoid arguing with adult students," and "Establish rapport with adult student at beginning of visit."

Locating problems during visits. The practices under this sub-heading of the checklist are the type used by teachers to



TABLE IX

PRACTICES OF "PREPARING ADULT STUDENT FOR INSTRUCTION"  
WHICH WERE USED BY MICHIGAN TEACHERS OF ADULT  
FARMERS IN ON-FARM INSTRUCTION DURING 1957-58

| Practices                                                                                 | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|-------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| 13. Compliment adult student on what<br>is well done                                      | 3.80               | 98.0                               |
| 9. Use technical terms which are<br>adjusted to adult student's level<br>of understanding | 3.62               | 94.9                               |
| 7. Avoid arguing with adult student                                                       | 3.59               | 85.6                               |
| 4. Establish rapport with adult<br>student at beginning of visit                          | 3.47               | 87.0                               |
| 2. Arrive at the farm at expected time                                                    | 3.45               | 78.9                               |
| 8. Adjust approach to the socio-<br>economic level of adult student                       | 3.42               | 90.9                               |
| 3. Call at house unless you know<br>where adult student is working                        | 3.38               | 93.9                               |
| 12. Refer to other farmers as examples<br>of those who adopted the practice               | 3.01               | 95.8                               |
| 11. Before giving instruction, deter-<br>mine adult student's interest in<br>problem      | 3.01               | 92.0                               |
| 10. Before giving instruction, deter-<br>mine adult student's awareness<br>of problem     | 3.00               | 92.9                               |
| 5. Make specific purpose of visit<br>known to adult student                               | 2.94               | 93.9                               |

TABLE IX CONCLUDED

PRACTICES OF "PREPARING ADULT STUDENT FOR INSTRUCTION"  
WHICH WERE USED BY MICHIGAN TEACHERS OF ADULT  
FARMERS IN ON-FARM INSTRUCTION DURING 1957-58

| Practices                                                                   | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|-----------------------------------------------------------------------------|--------------------|------------------------------------|
| 6. Avoid issues or beliefs that<br>conflict with adult student's<br>beliefs | 2.74               | 89.7                               |
| 1. Jointly determine purpose of visit<br>with adult student beforehand      | 2.74               | 62.4                               |
| 16. Promote future classes during<br>visits                                 | 2.73               | 95.9                               |
| 14. Inspire adult student to strive<br>for higher goals                     | 2.61               | 94.8                               |
| 15. Leave materials or bulletins with<br>adult                              | 2.53               | 90.7                               |
| Average                                                                     | 3.13               | 89.8                               |

locate problems of the adult farmer that can be dealt with by on-farm instruction or classroom instruction. The relatively low average value score of 2.35 indicates that the Michigan teachers who have used these practices found them only mildly effective.

One of the essential tenets of generally accepted philosophy of teaching vocational agriculture is that the instructional program should be based on the specific needs of the students as



revealed in their supervised farming programs. If this approach is not adhered to, the instruction is likely to be too general and less meaningful to the student. The teacher may provide considerable technical information but may neglect more basic information that would be more beneficial to the student. For the above reasons the practices of locating problems on visits are very important.

The average percentage of teachers using these practices was 69.9 which, although not high, indicates that many of the practices listed were in common use. More effective practices of locating problems of adult farmers during on-farm instruction must be identified and developed before the actual instructing of the students can be most successfully performed. The composite scores and percentage of teachers using these practices appear in Table X.

The practices receiving the highest value scores were "Locate problems while visiting adult students who attended classes previous year," and "Walk farm with adult student to survey soil and crop problems."

Instructing during farm visits. In this section of the checklist were compiled all of the actual practices of teaching the adult farmer while on the farm.

The value scores of the practices range from 3.40 down to 1.50, with an average of 2.55, and with an average of 75.0 per cent

TABLE X

PRACTICES OF "LOCATING PROBLEMS DURING VISITS" WHICH WERE  
USED BY MICHIGAN TEACHERS OF ADULT FARMERS IN ON-FARM  
INSTRUCTION DURING 1957-58

| Practices                                                                                 | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|-------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| 3. Locate problems while visiting<br>adult students who attended classes<br>previous year | 2.80               | 84.5                               |
| 7. Walk farm with adult student to<br>survey soil and crop problems                       | 2.79               | 87.6                               |
| 2. Locate problems while visiting<br>potential adult students before<br>course starts     | 2.76               | 87.6                               |
| 13. Secure soil, milk, or other<br>samples during visits                                  | 2.71               | 81.3                               |
| 11. Study adult student's DHIA,<br>soil test, or other records                            | 2.44               | 88.7                               |
| 8. Discuss problems of farm with<br>adult student and wife jointly                        | 2.39               | 74.0                               |
| 12. Analyze adult student's DHIA,<br>soil test, or other records                          | 2.34               | 82.8                               |
| 14. Keep record of subjects dis-<br>cussed on visits to determine<br>problems             | 2.32               | 61.5                               |
| 6. Ask adult student, "What part of<br>your farm needs most improvement?"                 | 2.22               | 46.7                               |
| 1. Locate adult student problems<br>during high school student visits                     | 2.14               | 89.4                               |
| 10. Analyze adult student's farm<br>business records                                      | 2.11               | 50.0                               |

TABLE X CONCLUDED

PRACTICES OF "LOCATING PROBLEMS DURING VISITS" WHICH WERE  
USED BY MICHIGAN TEACHERS OF ADULT FARMERS IN ON-FARM  
INSTRUCTION DURING 1957-58

| Practices                                                              | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|------------------------------------------------------------------------|--------------------|------------------------------------|
| 9. Study adult student's farm<br>business records                      | 2.09               | 60.8                               |
| 4. Visit newcomers soon after<br>they move into district               | 1.94               | 58.8                               |
| 5. Ask adult student, "What part<br>of your farm are you proudest of?" | 1.81               | 24.2                               |
| Average                                                                | 2.35               | 69.9                               |

of the teachers using the practices. Table XI has a list of all practices in this section and the scores, as well as the percentage of teachers using each practice.

The first five practices, all of which received a value rating of over 3.00 and a very high percentage of usage, were as follows: "Use discussion method of teaching during visits," "Refer adult student with highly technical problems to appropriate agencies or people," "Adjust instruction to the socio-economic level of adult student," "Use leading questions to stimulate discussion," and "Contact agencies or people about technical problems and then relay information to adult students."

TABLE XI

PRACTICES OF "INSTRUCTING DURING FARM VISITS" WHICH WERE USED  
BY MICHIGAN TEACHERS OF ADULT FARMERS IN ON-FARM  
INSTRUCTION DURING 1957-58

| Practices                                                                                            | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|------------------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| 2. Use discussion method of teaching during visits                                                   | 3.40               | 94.9                               |
| 14. Refer adult student with highly technical problems to appropriate agencies or people             | 3.30               | 89.7                               |
| 1. Adjust instruction to the socio-economic level of adult students                                  | 3.21               | 90.7                               |
| 4. Use leading questions to stimulate discussion                                                     | 3.13               | 98.0                               |
| 15. Contact agencies or people about technical problems and then relay information to adult students | 3.08               | 94.8                               |
| 16. Promise to provide further information on a question at next adult class                         | 2.83               | 89.7                               |
| 3. Use demonstrations to teach skills on visits                                                      | 2.80               | 92.9                               |
| 10. Observe adult student's application of a skill after it was taught                               | 2.64               | 86.2                               |
| 9. Use bulletins and other printed material on visits                                                | 2.51               | 92.7                               |
| 11. Have adult student make own calculations during instruction on visits                            | 2.33               | 86.5                               |



TABLE XI CONCLUDED

PRACTICES OF "INSTRUCTING DURING FARM VISITS" WHICH WERE USED  
BY MICHIGAN TEACHERS OF ADULT FARMERS IN ON-FARM  
INSTRUCTION DURING 1957-58

| Practices                                                                | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|--------------------------------------------------------------------------|--------------------|------------------------------------|
| 6. Use slide films, colored slides,<br>snapshots for instruction on farm | 2.33               | 24.2                               |
| 13. Involve children or hired man<br>in certain visits                   | 2.30               | 76.3                               |
| 8. Use specimen or models during<br>visits                               | 2.09               | 36.7                               |
| 7. Use charts and graphs for in-<br>struction on visits                  | 1.74               | 35.1                               |
| 12. Make calculations for adult<br>student yourself during visits        | 1.65               | 66.0                               |
| 5. Use the method of telling the<br>farmer the answers to his problems   | 1.50               | 44.8                               |
| Average                                                                  | 2.55               | 75.0                               |

Some practices in the list, such as Numbers six, seven and eight, were not used very extensively by teachers during on-farm instruction. The two lowest valued practices were: "Make calculations for adult student yourself during visits," and "Use the method of telling the farmer the answers to his problems." They were, nevertheless, being used by a considerable number of teachers.

Planning action during visits. The practices in this section are those which are closely related to the actual instruction of the student, but usually are used after the teaching of a new method is accomplished. The phase of the teaching process where the teacher helps the student to plan to utilize the knowledge that he has learned is a very important one. The planning of action with the adult farmer is an opportunity to capitalize on and can augment the instructional progress previously made. None of these practices has been given high value scores. The average score was 2.34, with an average of 61.0 per cent of the teachers using the practices. The practices are listed by their composite score rank in Table XII.

TABLE XII

PRACTICES OF "PLANNING ACTION DURING VISITS" WHICH WERE USED  
BY MICHIGAN TEACHERS OF ADULT FARMERS IN ON-FARM  
INSTRUCTION DURING 1957-58

| Practices                                                                    | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|------------------------------------------------------------------------------|--------------------|------------------------------------|
| 5. Encourage adoption of new practices<br>on small scale at beginning        | 2.97               | 95.9                               |
| 9. Assist adult student to conduct<br>trial plots on farm                    | 2.74               | 75.8                               |
| 6. Use economic urge to motivate adult<br>student to try new practices       | 2.58               | 93.8                               |
| 3. In decision-making questions, sug-<br>gest two or three choices of action | 2.57               | 92.9                               |





TABLE XII CONCLUDED

PRACTICES OF "PLANNING ACTION DURING VISITS" WHICH WERE USED  
BY MICHIGAN TEACHERS OF ADULT FARMERS IN ON-FARM  
INSTRUCTION DURING 1957-58

| Practices                                                                   | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|-----------------------------------------------------------------------------|--------------------|------------------------------------|
| 1. Ask questions to help adult student clarify his goals                    | 2.55               | 90.4                               |
| 11. Plan future action with adult and son(s) jointly                        | 2.43               | 75.3                               |
| 4. Provide several copies of farm map for adult student's use in planning   | 2.43               | 15.6                               |
| 2. Assist adult student to set goals of production or management            | 2.36               | 86.2                               |
| 13. Arrive at definite conclusions on key ideas discussed                   | 2.35               | 72.6                               |
| 12. Plan future action with entire family                                   | 2.29               | 37.5                               |
| 8. Use social prestige factor to motivate adult student to try new practice | 2.20               | 32.3                               |
| 14. Leave written report of conclusions reached and action planned          | 2.17               | 15.5                               |
| 10. Plan future action with adult student and wife jointly                  | 2.09               | 54.2                               |
| 7. Use urge for security to motivate adult student to try new practice      | 1.91               | 60.0                               |
| 15. Encourage adult student to take own notes during visits                 | 1.50               | 17.5                               |
| Average                                                                     | 2.34               | 61.0                               |



The practice to "Encourage adoption of new practices on small scale at beginning" received the highest value score, while the lowest value practice was to "Encourage adult student to take own notes during visits."

Evaluating farm practices during visits. The final step in teaching, that of evaluating the teaching, is the concern of this sub-heading. The average value score of the practices in this section was 2.32, which was the lowest average earned by the practices under any sub-heading in the checklist. The percentage of teachers using the practices, on the average, was 67.8. The results of the checklist survey for this section are shown in Table XIII.

The only practice that received an average value score of over 3.00 was to "Ask questions to help adult student evaluate his farm practices."

TABLE XIII

PRACTICES OF "EVALUATING FARM PRACTICES DURING VISITS" WHICH  
WERE USED BY MICHIGAN TEACHERS OF ADULT FARMERS  
IN ON-FARM INSTRUCTION DURING 1957-58

| Practices                                                                                    | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|----------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| 2. Ask questions to help adult student<br>evaluate his farm practices                        | 3.05               | 95.5                               |
| 4. Take adult student to observe new<br>practices of other farmers                           | 2.70               | 72.4                               |
| 6. Analyze with adult why practice<br>failed                                                 | 2.58               | 85.4                               |
| 13. Use local production standards to<br>assist adult student to evaluate<br>his business    | 2.52               | 77.6                               |
| 5. Analyze with adult why practice<br>succeeded                                              | 2.48               | 87.6                               |
| 1. Analyze discussion of previous<br>class in relation to adult student's<br>own farm        | 2.46               | 85.4                               |
| 16. Periodically analyze and re-<br>state future plans of the business<br>with entire family | 2.41               | 33.3                               |
| 3. Assist adult student to analyze<br>new practices as they affect entire<br>farm            | 2.40               | 82.5                               |
| 11. Analyze, with adult student,<br>a new practice adopted by a<br>neighbor                  | 2.34               | 86.6                               |

TABLE XIII CONCLUDED

PRACTICES OF "EVALUATING FARM PRACTICES DURING VISITS" WHICH  
WERE USED BY MICHIGAN TEACHERS OF ADULT FARMERS  
IN ON-FARM INSTRUCTION DURING 1957-58

| Practices                                                                                                          | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|--------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| 10. Analyze, with adult student,<br>practices recommended in magazines<br>and farm papers                          | 2.24               | 83.7                               |
| 12. Use M.S.U. Area Farm Management<br>Report to assist adult student to<br>evaluate his business                  | 2.18               | 61.2                               |
| 7. Keep written record of new prac-<br>tices being initiated by adult<br>students                                  | 2.18               | 44.9                               |
| 15. Periodically analyze and re-<br>state future plans of the business<br>with adult student and son(s)<br>jointly | 2.05               | 49.5                               |
| 9. Analyze, with adult student,<br>practices recommended by govern-<br>ment agencies                               | 2.01               | 84.7                               |
| 14. Periodically analyze and re-<br>state future plans of the business<br>with adult student and wife jointly      | 1.94               | 36.1                               |
| 8. Keep record of new practices<br>being discontinued by adult students                                            | 1.53               | 18.6                               |
| Average                                                                                                            | 2.32               | 67.8                               |

Evaluating instructional practices used by the teacher.

Under this sub-heading is listed the practices that teachers use to evaluate their on-farm instruction. The average value score for this section was 2.70 and there was an average of 63.5 per cent of the teachers using these practices. Table XIV reveals the composite scores and the percentage of teachers using each practice.

TABLE XIV

"EVALUATING INSTRUCTIONAL PRACTICES USED BY THE TEACHER"  
OF ADULT FARMERS IN ON-FARM INSTRUCTION  
IN MICHIGAN DURING 1957-58

| Practices                                                                                  | Composite Score | Percentage of Teachers Using |
|--------------------------------------------------------------------------------------------|-----------------|------------------------------|
| 1. Keep record of name, date, and mileage for farm visits to adult students                | 3.35            | 96.8                         |
| 5. Determine number of miles traveled per adult student visited                            | 3.19            | 24.8                         |
| 4. Keep record of adult students who were absent from farm when visited                    | 2.98            | 43.1                         |
| 2. Analyze mileage records of visits to adult students to determine how frequently visited | 2.92            | 66.0                         |
| 14. Take photographs of approved practices to show "before" and "after" situations         | 2.92            | 43.3                         |

TABLE XIV CONCLUDED

**"EVALUATING INSTRUCTIONAL PRACTICES USED BY THE TEACHER"  
OF ADULT FARMERS IN ON-FARM INSTRUCTION  
IN MICHIGAN DURING 1957-58**

| Practices                                                                                                           | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|---------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| 12. Analyze class attendance to determine whether adult students were in attendance who requested certain subjects  | 2.80               | 79.8                               |
| 10. Analyze enrollments to determine the influence of visits made before courses start                              | 2.80               | 63.9                               |
| 6. Attempt to analyze adult student's response as instruction is given                                              | 2.72               | 81.5                               |
| 3. Record requests from adult students to determine interest in being visited                                       | 2.52               | 34.4                               |
| 13. Analyze class discussion to determine whether adult students taught skills on the farm are more active in class | 2.45               | 52.6                               |
| 9. Observe adult student's application of skill which was taught during a previous class                            | 2.45               | 86.2                               |
| 11. Inquire about the action suggested at the previous visit                                                        | 2.37               | 78.1                               |
| 8. Observe performance of a skill taught on a previous visit                                                        | 2.31               | 72.6                               |
| 7. Inquire how much benefit materials were that were left at a previous visit                                       | 2.00               | 65.3                               |
| <b>Average</b>                                                                                                      | <b>2.70</b>        | <b>63.5</b>                        |

Two practices received a high value rating of over 3.00. They were "Keep record of name, date, and mileage for farm visits to adult students" and "Determine number of miles traveled per adult student visited."

A summary of practices of on-farm instruction used in adult-farmer courses by Michigan teachers during 1957-58.

Those practices that have received an especially high value score from the entire checklist are presented in this summary. The practices of on-farm instruction from the checklist that 75.0 per cent or more of the Michigan teachers were using and which they evaluated as very effective, as evidenced by an average composite score of 3.00 or over, appear in Table XV. There are twenty-five practices in this category.

TABLE XV

A SUMMARY OF FREQUENTLY USED PRACTICES OF ON-FARM INSTRUCTION  
THAT RECEIVED HIGH VALUE SCORES

| Sub-heading<br>and Number | Practices                                                              | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|---------------------------|------------------------------------------------------------------------|--------------------|------------------------------------|
| A-4                       | Collect a small file of<br>pertinent materials to be<br>carried in car | 3.25               | 82.3                               |
| A-6                       | Wear less formal clothing<br>for farm visits                           | 3.67               | 93.8                               |



TABLE XV CONTINUED

A SUMMARY OF FREQUENTLY USED PRACTICES OF ON-FARM INSTRUCTION  
THAT RECEIVED HIGH VALUE SCORES

| Sub-heading<br>and Number | Practices                                                                  | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|---------------------------|----------------------------------------------------------------------------|--------------------|------------------------------------|
| A-9                       | Limit most visits to one major purpose                                     | 3.04               | 81.7                               |
| B-10                      | Visit adult students as frequently as their needs require                  | 3.26               | 89.5                               |
| B-12                      | Make at least one visit during summer                                      | 3.47               | 81.6                               |
| B-14                      | Visit at a crucial time during adoption of a farm practice                 | 3.13               | 84.5                               |
| B-15                      | Avoid visiting during days of important farm work                          | 3.27               | 79.1                               |
| B-23                      | Plan most visits shorter than an hour long                                 | 3.19               | 81.7                               |
| C-2                       | Arrive at the farm at expected time                                        | 3.45               | 78.9                               |
| C-3                       | Call at house unless you know where adult student is working               | 3.38               | 93.9                               |
| C-4                       | Establish rapport with adult student at beginning of visit                 | 3.47               | 87.0                               |
| C-7                       | Avoid arguing with adult student                                           | 3.59               | 85.6                               |
| C-8                       | Adjust approach to the socio-economic level of adult student being visited | 3.42               | 90.9                               |



TABLE XV CONTINUED

A SUMMARY OF FREQUENTLY USED PRACTICES OF ON-FARM INSTRUCTION  
THAT RECEIVED HIGH VALUE SCORES

| Sub-heading<br>and Number | Practices                                                                                     | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|---------------------------|-----------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| C-9                       | Use technical terms which<br>are adjusted to adult<br>student's level of under-<br>standing   | 3.62               | 94.9                               |
| C-10                      | Before giving instruction,<br>determine adult student's<br>awareness of problem               | 3.00               | 92.9                               |
| C-11                      | Before giving instruction,<br>determine adult student's<br>interest in problem                | 3.01               | 92.0                               |
| C-12                      | Refer to other farmers as<br>examples of those who<br>adopted the practice                    | 3.01               | 95.8                               |
| C-13                      | Compliment adult student on<br>what is well done                                              | 3.80               | 98.0                               |
| E-1                       | Adjust instruction to the<br>socio-economic level of<br>adult student                         | 3.21               | 90.7                               |
| E-2                       | Use discussion method of<br>teaching during visits                                            | 3.40               | 94.9                               |
| E-4                       | Use leading questions to<br>stimulate discussion                                              | 3.13               | 98.0                               |
| E-14                      | Refer adult student with<br>highly technical problems<br>to appropriate agencies<br>or people | 3.30               | 89.7                               |

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TABLE XV CONCLUDED

A SUMMARY OF FREQUENTLY USED PRACTICES OF ON-FARM INSTRUCTION  
THAT RECEIVED HIGH VALUE SCORES

| Sub-heading<br>and Number | Practices                                                                                        | Composite<br>Score | Percentage<br>of Teachers<br>Using |
|---------------------------|--------------------------------------------------------------------------------------------------|--------------------|------------------------------------|
| E-15                      | Contact agencies or people about technical problems and then relay information to adult students | 3.08               | 94.8                               |
| G-2                       | Ask questions to help adult student evaluate his farm practices                                  | 3.05               | 95.5                               |
| H-1                       | Keep record of name, date, and mileage for farm visits to adult students                         | 3.35               | 96.8                               |

Practices Used by Outstanding Teachers of the Central Region

The second part of this chapter will present the results of the checklist survey of practices of on-farm instruction of adult farmers used during 1957-58 by outstanding teachers of the thirteen states of the Central Region.

Summary of the checklist survey. Seventy outstanding teachers were sent checklists to complete and return. These teachers were selected by their head state supervisors as being outstanding in the on-farm instruction phase of the adult-farmer

course. Fifty-three checklists were returned and used. Three other replies were not used because the teachers had not adequately completed the checklists or had based their answers on courses other than their adult-farmer course. Fifty-six replies, from the seventy sent, was an 80.0 per cent return of the checklists. The totals of the checklist survey are shown in Appendix J.

Years of experience of outstanding teachers of the Central Region. The outstanding teachers of adult-farmer instruction from the thirteen states of the Central Region were asked to reveal the years of experience in teaching adult-farmer courses. A summary of this information is shown in Table XVI.

The average number of years of experience in teaching adult-farmer courses by the outstanding teachers was six and eight-tenths years. This compares with five and nine-tenths years of experience for the Michigan teachers. Nearly one more year of experience for the outstanding teachers would have allowed them time to have used more of the practices than the Michigan teachers. It would also have given them more experience with each practice, so their evaluation should be more valid.

Adult-farmer on-farm instruction visits conducted per year by outstanding teachers of the Central Region. The teachers of the Central Region estimated that they visited their adult farmers

TABLE XVI  
YEARS OF EXPERIENCE IN TEACHING ADULT-FARMER COURSES BY  
OUTSTANDING TEACHERS OF THE CENTRAL REGION

| Years of experience in<br>teaching adult farmers | Number of<br>teachers | Per cent of<br>teachers |
|--------------------------------------------------|-----------------------|-------------------------|
| 1 to 2 years                                     | 4                     | 11.8                    |
| 3 to 4 "                                         | 3                     | 8.8                     |
| 5 to 6 "                                         | 4                     | 11.8                    |
| 7 to 8 "                                         | 11                    | 32.4                    |
| 9 to 10 "                                        | 1                     | 2.9                     |
| 11 to 12 "                                       | 4                     | 11.8                    |
| 13 to 14 "                                       | 0                     | 0                       |
| 15 to 16 "                                       | 1                     | 2.9                     |
| 17 or more "                                     | 6                     | 17.6                    |
| Total of teachers reporting                      | 34                    | 100.0                   |

a total of ninety-two times on the average per year. The range of visits per teacher was from eighteen to three-hundred fifty per year. The average number of visits conducted by Michigan teachers, recorded in a previous section of this chapter, was 56.3 per year per teacher. Table XVII shows the number of on-farm visits made by outstanding teachers.

TABLE XVII

NUMBER OF ON-FARM INSTRUCTION VISITS MADE PER YEAR TO ADULT  
FARMERS BY OUTSTANDING TEACHERS OF THE CENTRAL REGION

| Number of visits<br>conducted per year | Number of<br>teachers | Per cent of<br>teachers |
|----------------------------------------|-----------------------|-------------------------|
| 15 or less visits                      | 2                     | 5.6                     |
| 16 to 30 "                             | 4                     | 11.1                    |
| 31 to 45 "                             | 8                     | 22.2                    |
| 46 to 60 "                             | 3                     | 8.3                     |
| 61 to 75 "                             | 2                     | 5.6                     |
| 76 to 90 "                             | 2                     | 5.6                     |
| 91 to 105 "                            | 7                     | 19.4                    |
| 106 to 120 "                           | 1                     | 2.8                     |
| 121 to 135 "                           | 0                     | 0                       |
| 136 or over "                          | 7                     | 19.4                    |
| Total of teachers reporting            | 36                    | 100.0                   |

Composite scores and percentage of teachers of the Central Region using the practices on the checklist. The main purpose of collecting data on the practices of on-farm instruction from outstanding teachers of the Central Region was to use the information as a standard from which to select promising practices for demonstrational purposes which will be explained in the next chapter.



Therefore, no discussion will be presented at this point concerning the composite scores or the percentage of teachers that used each practice on the checklist. However, the results can be seen by turning to Appendix K.

A summary of practices of on-farm instruction used in adult-farmer courses by teachers of the Central Region during 1957-58. As a parallel to the summary of the Michigan data, there were sixty-three practices on the checklist that were used by 75.0 per cent or more of the outstanding teachers and given an average composite score of 3.00 or more. In the Michigan checklist summary there were twenty-five practices that met the above requirements. The twenty-five practices in the Michigan list were also on the list of the sixty-three practices from the Central Region summary.

An analysis of the sixty-three practices from the Central Region checklist summary is made under the following sub-headings: Organizing for visits—four practices; Scheduling farm visits—nine practices; Preparing adult student for instruction—fifteen practices; Locating problems during visits—seven practices; Instructing during farm visits—eight practices; Planning action during visits—six practices; Evaluating farm practices during visits—six practices; and Evaluating instructional practices used by the teacher—eight practices. All of the practices under the sub-heading of "Preparing adult student for instruction" were

selected in the above mentioned list of sixty-three practices.

### Comparison of Michigan With the Central Region

The last part of this chapter will present the results of the checklist survey of practices of on-farm instruction by Michigan teachers of adult-farmer courses in comparison with the practices used by outstanding teachers of the Central Region.

Practices of on-farm instruction which were used more frequently by outstanding teachers. A statistical comparison between the percentage of Michigan teachers using the practices and the percentage of outstanding teachers using the practices in conjunction with the evaluation given the practices by the two groups, revealed a list of thirty-eight practices that were significantly different. The procedure which was followed to select these practices is explained in Chapter III. A list of the thirty-eight practices and the total figures which were used in the chi square statistical analysis are shown in Table XVIII. As explained previously, there were one hundred teachers in the Michigan group and fifty-three in the Central Region group of teachers. Twenty-five of the practices showed a significant difference at the one per cent level. The remaining thirteen practices were significantly different at the five per cent level.

TABLE XVIII

PRACTICES OF ON-FARM INSTRUCTION OF ADULT-FARMERS THAT WERE  
USED AND EVALUATED TO A SIGNIFICANTLY HIGHER DEGREE BY  
OUTSTANDING TEACHERS OF THE CENTRAL REGION WHEN  
COMPARED WITH MICHIGAN TEACHERS

| Sub-<br>heading<br>and<br>Number | Significant<br>Practices                                                            | Michigan<br>Teachers |                       |                                           | Outstanding<br>Teachers |                                           |     |
|----------------------------------|-------------------------------------------------------------------------------------|----------------------|-----------------------|-------------------------------------------|-------------------------|-------------------------------------------|-----|
|                                  |                                                                                     | Never<br>Used        | Used and<br>Evaluated | ***                                       | Never<br>Used           | Used and<br>Evaluated                     | *** |
|                                  |                                                                                     |                      |                       |                                           |                         |                                           |     |
|                                  |                                                                                     |                      |                       |                                           |                         |                                           |     |
|                                  |                                                                                     |                      |                       | Ef- Less<br>fec- Ef-<br>tive fec-<br>tive |                         | Ef- Less<br>fec- Ef-<br>tive fec-<br>tive |     |
| *A-1                             | Explain purposes of<br>farm visits during<br>adult classes                          | 23                   | 28                    | 32                                        | 9                       | 25                                        | 13  |
| **B-2                            | Arrange visits during<br>class meetings through<br>approved practices<br>check list | 67                   | 3                     | 11                                        | 30                      | 11                                        | 7   |
| **B-6                            | Maintain a list of<br>potential farm visits                                         | 32                   | 26                    | 24                                        | 14                      | 29                                        | 4   |
| *B-24                            | Notify (phone, card)<br>adult student before<br>visit is made                       | 54                   | 20                    | 10                                        | 19                      | 13                                        | 13  |
| *C-1                             | Jointly determine pur-<br>pose of visit with<br>adult student before-<br>hand       | 30                   | 29                    | 20                                        | 6                       | 25                                        | 15  |
| **D-1                            | Locate adult student<br>problems during high<br>school student visits               | 9                    | 26                    | 47                                        | 1                       | 28                                        | 19  |
| *D-4                             | Visit newcomers soon<br>after they move into<br>district                            | 34                   | 17                    | 32                                        | 11                      | 21                                        | 15  |



TABLE XVIII CONTINUED

PRACTICES OF ON-FARM INSTRUCTION OF ADULT-FARMERS THAT WERE  
USED AND EVALUATED TO A SIGNIFICANTLY HIGHER DEGREE BY  
OUTSTANDING TEACHERS OF THE CENTRAL REGION WHEN  
COMPARED WITH MICHIGAN TEACHERS

| Sub-<br>heading<br>and<br>Number | Significant<br>Practices                                                    | Michigan<br>Teachers |                             |    | Outstanding<br>Teachers |                             |    |
|----------------------------------|-----------------------------------------------------------------------------|----------------------|-----------------------------|----|-------------------------|-----------------------------|----|
|                                  |                                                                             | Never<br>Used        | Used and<br>Evaluated       |    | Never<br>Used           | Used and<br>Evaluated       |    |
|                                  |                                                                             | ***                  |                             |    | ***                     |                             |    |
|                                  |                                                                             | Ef-<br>fec-<br>tive  | Less<br>Ef-<br>fec-<br>tive |    | Ef-<br>fec-<br>tive     | Less<br>Ef-<br>fec-<br>tive |    |
| **D-8                            | Discuss problems of<br>farm with adult student<br>and wife jointly          | 21                   | 32                          | 30 | 4                       | 37                          | 9  |
| *D-9                             | Study adult student's<br>farm business records                              | 31                   | 33                          | 27 | 9                       | 25                          | 17 |
| **D-10                           | Analyze adult student's<br>farm business records                            | 40                   | 18                          | 23 | 11                      | 24                          | 10 |
| **D-11                           | Study adult student's<br>DHIA, soil test, or<br>other records               | 11                   | 38                          | 36 | 2                       | 37                          | 10 |
| **D-12                           | Analyze adult student's<br>DHIA, soil test, or<br>other records             | 15                   | 31                          | 35 | 1                       | 38                          | 9  |
| *E-8                             | Use specimen or models<br>during visits                                     | 53                   | 13                          | 17 | 22                      | 17                          | 9  |
| *E-11                            | Have adult student make<br>own calculations during<br>instruction on visits | 13                   | 31                          | 40 | 7                       | 30                          | 13 |
| **F-2                            | Assist adult student to<br>set goals of production<br>or management         | 12                   | 28                          | 42 | 2                       | 34                          | 12 |

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TABLE XVIII CONTINUED

PRACTICES OF ON-FARM INSTRUCTION OF ADULT-FARMERS THAT WERE  
USED AND EVALUATED TO A SIGNIFICANTLY HIGHER DEGREE BY  
OUTSTANDING TEACHERS OF THE CENTRAL REGION WHEN  
COMPARED WITH MICHIGAN TEACHERS

| Sub-<br>heading<br>and<br>Number | Significant<br>Practices                                                            | Michigan<br>Teachers |                       |    | Outstanding<br>Teachers |                       |    |
|----------------------------------|-------------------------------------------------------------------------------------|----------------------|-----------------------|----|-------------------------|-----------------------|----|
|                                  |                                                                                     | Never<br>Used        | Used and<br>Evaluated |    | Never<br>Used           | Used and<br>Evaluated |    |
|                                  |                                                                                     | ***                  |                       |    | ***                     |                       |    |
|                                  |                                                                                     | Ef- Less             |                       |    | Ef- Less                |                       |    |
|                                  |                                                                                     | fec- Ef-             |                       |    | fec- Ef-                |                       |    |
|                                  |                                                                                     | tive fec-            |                       |    | tive fec-               |                       |    |
|                                  |                                                                                     | tive                 |                       |    | tive                    |                       |    |
| **F-7                            | Use urge for security to<br>motivate adult student<br>to try new practice           | 31                   | 12                    | 40 | 10                      | 22                    | 16 |
| **F-8                            | Use social prestige fac-<br>tor to motivate adult<br>student to try new<br>practice | 54                   | 8                     | 21 | 19                      | 14                    | 14 |
| **F-9                            | Assist adult student<br>to conduct trial plots<br>on farm                           | 24                   | 38                    | 24 | 5                       | 35                    | 7  |
| **F-10                           | Plan future action<br>with adult student and<br>wife jointly                        | 38                   | 18                    | 27 | 4                       | 30                    | 16 |
| *F-11                            | Plan future action with<br>adult student and son(s)<br>jointly                      | 22                   | 36                    | 27 | 7                       | 35                    | 8  |
| *F-12                            | Plan future action<br>with entire family                                            | 50                   | 36                    | 27 | 18                      | 19                    | 12 |
| **F-13                           | Arrive at definite con-<br>clusions on key ideas<br>discussed                       | 22                   | 29                    | 31 | 4                       | 30                    | 12 |

TABLE XVIII CONTINUED

PRACTICES OF ON-FARM INSTRUCTION OF ADULT-FARMERS THAT WERE USED AND EVALUATED TO A SIGNIFICANTLY HIGHER DEGREE BY OUTSTANDING TEACHERS OF THE CENTRAL REGION WHEN COMPARED WITH MICHIGAN TEACHERS

| Sub-heading and Number | Significant Practices                                                     | Michigan Teachers |                    |      | Outstanding Teachers |                    |      |
|------------------------|---------------------------------------------------------------------------|-------------------|--------------------|------|----------------------|--------------------|------|
|                        |                                                                           | Never Used        | Used and Evaluated |      | Never Used           | Used and Evaluated |      |
|                        |                                                                           | ***               |                    |      | ***                  |                    |      |
|                        |                                                                           | Ef-               | fec-               | fec- | Ef-                  | fec-               | fec- |
|                        |                                                                           | fec-              | fec-               | fec- | fec-                 | fec-               | fec- |
|                        |                                                                           | tive              | tive               | tive | tive                 | tive               | tive |
| **G-1                  | Analyze discussion of previous class in relation to adult student's farm  | 13                | 36                 | 34   | 5                    | 35                 | 9    |
| **G-3                  | Assist adult student to analyze new practices as they affect entire farm  | 17                | 27                 | 41   | 0                    | 29                 | 19   |
| *G-4                   | Take adult student to observe new practices of other farmers              | 22                | 39                 | 23   | 5                    | 34                 | 11   |
| **G-5                  | Analyze with adult why practice succeeded                                 | 11                | 32                 | 34   | 4                    | 33                 | 10   |
| **G-7                  | Keep written record of new practices being initiated by adult students    | 49                | 14                 | 22   | 15                   | 18                 | 13   |
| **G-9                  | Analyze, with adult student, practices recommended by government agencies | 12                | 21                 | 51   | 7                    | 25                 | 16   |
| *G-11                  | Analyze, with adult student, a new practice adopted by a neighbor         | 9                 | 33                 | 42   | 6                    | 29                 | 12   |



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TABLE XVIII CONTINUED

PRACTICES OF ON-FARM INSTRUCTION OF ADULT-FARMERS THAT WERE  
USED AND EVALUATED TO A SIGNIFICANTLY HIGHER DEGREE BY  
OUTSTANDING TEACHERS OF THE CENTRAL REGION WHEN  
COMPARED WITH MICHIGAN TEACHERS

| Sub-<br>heading<br>and<br>Number | Significant<br>Practices                                                                            | Michigan<br>Teachers |                       |    | Outstanding<br>Teachers |                       |    |
|----------------------------------|-----------------------------------------------------------------------------------------------------|----------------------|-----------------------|----|-------------------------|-----------------------|----|
|                                  |                                                                                                     | Never<br>Used        | Used and<br>Evaluated |    | Never<br>Used           | Used and<br>Evaluated |    |
|                                  |                                                                                                     | ***                  |                       |    | ***                     |                       |    |
|                                  |                                                                                                     | Ef-                  | Less                  |    | Ef-                     | Less                  |    |
|                                  |                                                                                                     | fec-                 | Ef-                   |    | fec-                    | Ef-                   |    |
|                                  |                                                                                                     | tive                 | fec-                  |    | tive                    | fec-                  |    |
|                                  |                                                                                                     |                      | tive                  |    |                         | tive                  |    |
| *G-13                            | Use local production standards to assist student to evaluate his business                           | 22                   | 35                    | 29 | 6                       | 33                    | 11 |
| **G-14                           | Periodically analyze and restate future plans of the business with adult student and wife jointly   | 53                   | 10                    | 20 | 14                      | 17                    | 18 |
| **G-15                           | Periodically analyze and restate future plans of the business with adult student and son(s) jointly | 40                   | 17                    | 24 | 13                      | 20                    | 15 |
| **G-16                           | Periodically analyze and restate future plans of the business with entire family                    | 53                   | 12                    | 15 | 20                      | 16                    | 12 |
| *H-3                             | Record requests from adult students to determine interest in being visited                          | 56                   | 12                    | 16 | 19                      | 17                    | 10 |
| **H-8                            | Observe performance of a skill taught on a previous visit                                           | 21                   | 26                    | 34 | 5                       | 31                    | 11 |

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The number of transformed cells was determined by the number of colonies obtained on the selective medium. The results are the mean of three independent experiments. Error bars represent standard deviation.

1. *What is the purpose of the study?*  
 2. *What are the research questions or hypotheses?*  
 3. *What is the study design?*  
 4. *What is the sample size and how was it selected?*  
 5. *What are the variables being studied?*  
 6. *What are the data collection methods?*  
 7. *What are the results of the study?*  
 8. *What are the conclusions and implications of the study?*

TABLE XVIII CONCLUDED

PRACTICES OF ON-FARM INSTRUCTION OF ADULT-FARMERS THAT WERE USED AND EVALUATED TO A SIGNIFICANTLY HIGHER DEGREE BY OUTSTANDING TEACHERS OF THE CENTRAL REGION WHEN COMPARED WITH MICHIGAN TEACHERS

| Sub-<br>heading<br>and<br>Number | Significant<br>Practices                                                                                        | Michigan<br>Teachers |                             |    | Outstanding<br>Teachers |                             |    |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------|----|-------------------------|-----------------------------|----|
|                                  |                                                                                                                 | Never<br>Used        | Used and<br>Evaluated       |    | Never<br>Used           | Used and<br>Evaluated       |    |
|                                  |                                                                                                                 | ***                  |                             |    | ***                     |                             |    |
|                                  |                                                                                                                 | Ef-<br>fec-<br>tive  | Less<br>Ef-<br>fec-<br>tive |    | Ef-<br>fec-<br>tive     | Less<br>Ef-<br>fec-<br>tive |    |
| **H-11                           | Inquire about the action suggested at the previous visit                                                        | 18                   | 26                          | 38 | 3                       | 29                          | 16 |
| **H-13                           | Analyze class discussion to determine whether adult students taught skills on the farm are more active in class | 40                   | 22                          | 21 | 11                      | 26                          | 12 |
| **H-14                           | Take photographs of approved practices to show "before" and "after" situations                                  | 47                   | 17                          | 8  | 12                      | 29                          | 8  |

\*Represents a significant difference at the five to the one per cent level.

\*\*Represents a significant difference at or above the one per cent level.

\*\*\*This includes the checklist totals in July, 1958, from the columns "Partly Effective," "Not Effective," or "Effectiveness Uncertain."

Sub-heading summary of the checklist survey. To provide a condensation of the checklist survey involving the Michigan teachers and the outstanding teachers of the Central Region is the purpose of this section. The average composite score and percentage of teachers using the practices under each sub-heading in the checklist are shown in Table XIX.

TABLE XIX

SUMMARY OF SUB-HEADING AVERAGE COMPOSITE SCORES AND PERCENTAGES OF MICHIGAN TEACHERS AND OUTSTANDING TEACHERS OF THE CENTRAL REGION USING THE PRACTICES OF ON-FARM INSTRUCTION

| Sub-heading of the Checklist                              | Michigan Averages |                | Central Region Averages |                |
|-----------------------------------------------------------|-------------------|----------------|-------------------------|----------------|
|                                                           | Composite Score   | Per cent Using | Composite Score         | Per cent Using |
| A. Organising for visits                                  | 2.89              | 73.7           | 3.15                    | 77.3           |
| B. Scheduling farm visits                                 | 2.73              | 53.9           | 3.17                    | 59.6           |
| C. Preparing adult student for instruction                | 3.13              | 89.8           | 3.49                    | 91.1           |
| D. Locating problems during visits                        | 2.35              | 69.9           | 2.98                    | 79.1           |
| E. Instructing during farm visits                         | 2.55              | 75.0           | 2.90                    | 77.2           |
| F. Planning action during visits                          | 2.34              | 61.0           | 2.91                    | 72.5           |
| G. Evaluating farm practices during visits                | 2.32              | 67.8           | 2.93                    | 75.7           |
| H. Evaluating instructional practices used by the teacher | 2.70              | 63.5           | 3.12                    | 76.2           |
| Checklist Average                                         | 2.63              | 69.3           | 3.08                    | 76.1           |

In all sub-heading averages the outstanding teachers had higher scores and percentages of usage. This difference should have been expected because the teachers of the Central Region were selected for their outstanding performance of on-farm instruction with adult farmers. The differences between the Michigan teachers and the outstanding teachers of the Central Region in Table XIX were not significant at the five per cent level.

The largest difference in composite scores between the Michigan teachers and the teachers of the Central Region was under the sub-heading, "Locating problems during visits," with an increase by the teachers of the Central Region over the Michigan teachers of sixty-three one-hundredths of a point. The next largest difference in composite scores was under the sub-heading of "Evaluating farm practices during visits," with an increase of sixty-one one-hundredths of a point. These two categories of locating problems during visits and evaluating farm practices are very important phases of good teaching on the farm. In both phases the Michigan teachers who had used these practices gave them the rather low composite scores of 2.35 and 2.32, respectively. The percentage of usage of these two sub-headings of practices was 69.9 and 67.8, as compared with the average of 69.3 per cent. This indicates that the teachers were less satisfied with the effectiveness of the

practices in these categories than with those in the other categories, yet they used these practices as frequently as the average of all the categories in Table XIX.

### Summary of Chapter

This chapter has presented information about Michigan departments of vocational agriculture in the study, the results of the checklist survey of Michigan teachers, and the checklist survey results of the outstanding teachers of the Central Region. The following findings are summarized.

1. The typical Michigan teacher who took part in the study was from a one-man department on Plan D, teaching four high school classes of vocational agriculture, with one conference and one adult or young-farmer period in the high school schedule, with a high school student enrollment of between thirty-one and forty, teaching one adult-farmer course in farm management, who was paid one-seventh of his salary for adult-farmer work, having eleven to twenty adult farmers enrolled, and ten class meetings per adult-farmer course.

2. There were 138 checklists sent to Michigan teachers. One hundred and eight, or 78.2 per cent, of the checklists were returned. Eight of these were not usable.

3. The average years of experience of teaching adult-farmer courses for the Michigan teachers in the study was





five and nine-tenths years.

4. The average number of on-farm visits conducted by Michigan teachers per year was 56.3, with a range of from eight to three-hundred. This would indicate that the adult-farmer is visited approximately two and three-tenths times per year.

5. Twenty-five practices from the checklist survey among Michigan teachers were used by 75.0 per cent or more of the teachers and given an average composite score of 3.00 or more, which is an indication of their effectiveness.

6. Seventy outstanding teachers from thirteen states of the Central Region were sent checklist forms. Fifty-six, or 80.0 per cent, of the checklists were returned. Three of these were not usable.

7. The average number of years of experience in teaching adult-farmer courses by outstanding teachers of the Central Region was six and eight-tenths years.

8. The average number of on-farm visits conducted by outstanding teachers of the Central Region was ninety-two per year.

9. Sixty-three practices from the checklist survey from the outstanding teacher group were used by 75.0 per cent or more teachers and had a composite score of 3.00 or over for effectiveness.

10. Thirty-eight practices from the checklist were found

to be used more and evaluated higher by the outstanding teachers of the Central Region as compared with the Michigan teachers to a significantly higher level.

## CHAPTER V

### DEMONSTRATION OF PROMISING PRACTICES

This chapter will report the second major phase of the study which was to demonstrate the effectiveness of ten promising practices of individual on-farm instruction with adult farmers, during 1958-59, by Michigan teachers.

Through the approach of collecting data from teachers of adult-farmer courses from thirteen states of the Central Region who were considered outstanding in providing on-farm instruction, it was hoped to discover some promising practices that had not been used extensively in adult-farmer courses by Michigan teachers. The task was then to have these promising practices tried on a demonstrational basis by a sufficiently large group of Michigan teachers to determine their effectiveness and practicality. In the following sections the results of the demonstration of the ten promising practices will be presented and discussed.

#### Selection of Promising Practices

The thirty-eight practices that were found to be used more and evaluated higher to a statistically significant extent by the outstanding teachers of the Central Region when compared

with the Michigan teachers formed the basis for selection of the promising practices. A list of these thirty-eight practices was reported in Table XVIII of Chapter IV. Twenty practices were selected from this list of thirty-eight. The selection was based on criteria explained in Chapter III.

The Michigan teachers of adult-farmer courses for 1958-59 were then asked to select the practices that they would be willing to use on a demonstrational basis from the list of twenty potentially promising practices mentioned above. The results of the selection of practices from this list are revealed in Table XX. This table shows the number of teachers as well as the percentage of teachers who selected each practice. Only the selections of the teachers who were personally interviewed at the summer conference of the teachers of vocational agriculture were included in this list.

From this list of twenty practices, nine were chosen for the demonstration of promising practices. These were chosen because they were the most frequently selected by the teachers, or were similar to other practices which when combined provided sufficient numbers. Those practices that were selected frequently were Numbers A-1, B-6, F-9 and H-14 as listed in Table XX. The different teachers selecting Numbers D-10, D-11 and D-12 were combined because of the similarity of the practices, and were encouraged to demonstrate Number D-12. Teachers who had selected

TABLE XX

PRACTICES THAT MET THE REQUIREMENTS FOR BEING CONSIDERED  
PROMISING PRACTICES AND THE NUMBER OF MICHIGAN TEACHERS  
SELECTING EACH FOR DEMONSTRATIONAL PURPOSES

| Sub-<br>heading<br>and<br>Number | Practice                                                      | Number of<br>Teachers<br>Selecting | Per cent of<br>Teachers<br>Selecting |
|----------------------------------|---------------------------------------------------------------|------------------------------------|--------------------------------------|
| A-1                              | Explain purposes of farm visits during adult classes          | 17                                 | 37.8                                 |
| B-6                              | Maintain a list of potential farm visits                      | 16                                 | 35.6                                 |
| D-8                              | Discuss problems of farm with adult student and wife jointly  | 11                                 | 24.4                                 |
| D-10                             | Analyze adult student's farm business records                 | 5                                  | 11.1                                 |
| D-11                             | Study adult student's DHIA, soil test, or other records       | 6                                  | 13.3                                 |
| D-12                             | Analyze adult student's DHIA, soil test, or other records     | 8                                  | 17.8                                 |
| E-11                             | Have adult student make own calculations during instruction   | 2                                  | 4.4                                  |
| F-2                              | Assist adult student to set goals of production or management | 7                                  | 15.6                                 |
| F-9                              | Assist adult student to conduct trial plots on farm           | 18                                 | 40.0                                 |
| F-10                             | Plan future action with adult student and wife jointly        | 6                                  | 13.3                                 |
| F-11                             | Plan future action with adult student and son(s) jointly      | 5                                  | 11.1                                 |

TABLE XX CONCLUDED

PRACTICES THAT MET THE REQUIREMENTS FOR BEING CONSIDERED  
PROMISING PRACTICES AND THE NUMBER OF MICHIGAN TEACHERS  
SELECTING EACH FOR DEMONSTRATIONAL PURPOSES

| Sub-<br>heading<br>and<br>Number | Practice                                                                                                                  | Number of<br>Teachers<br>Selecting | Per cent of<br>Teachers<br>Selecting |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------------|
| F-13                             | Arrive at definite conclusions<br>on key ideas discussed                                                                  | 5                                  | 11.1                                 |
| G-1                              | Analyze discussion of previous<br>class in relation to adult<br>student's own farm                                        | 8                                  | 17.8                                 |
| G-4                              | Take adult student to observe<br>new practices of other farmers                                                           | 16                                 | 35.6                                 |
| G-5                              | Analyze with adult why practice<br>succeeded                                                                              | 11                                 | 24.4                                 |
| G-11                             | Analyze, with adult student, a<br>new practice adopted by a neighbor                                                      | 10                                 | 22.2                                 |
| G-13                             | Use local production standards<br>to assist adult student to<br>evaluate his business                                     | 10                                 | 22.2                                 |
| H-8                              | Observe performance of a skill<br>taught on a previous visit                                                              | 0                                  | 0                                    |
| H-13                             | Analyze class discussions to<br>determine whether adult students<br>taught skills on the farm are<br>more active in class | 8                                  | 17.8                                 |
| H-14                             | Take photographs of approved<br>practices to show "before"<br>and "after" situations                                      | 17                                 | 37.8                                 |





Numbers D-8, F-10 and F-11 were encouraged to use D-8. Numbers F-2 and G-13 were combined because of their similarity and the teachers were encouraged to use G-13. Numbers G-4 and G-11 were combined and the teachers were encouraged to try G-4. Number G-1, although not quite as popular, was selected for the demonstration because it was somewhat different from the other promising practices and is a type of on-farm instruction practice that suggests a very close relationship with the class meetings. Number G-5 was considered to be rather general and too similar to more popular practices on the list. Numbers E-11, F-13, H-8 and H-13 were eliminated because they were not frequently selected and were not readily combined with other practices. The teachers who had selected Numbers E-11, F-13, H-8 and H-13 were not given suggestions for alternate practices.

#### Results of the Demonstration of Promising Practices

The evaluation of the promising practices of on-farm instruction that were used on a demonstrational basis by Michigan teachers of adult-farmer courses during the 1958-59 school year will be presented in the following sections.

A total of eighty-one teachers selected promising practices at the beginning of the year. There were sixty teachers who participated in the evaluation at the end of the 1958-59 year, in addition to six teachers who did not teach adult-farmer courses

as they had planned, but who replied to the inquiry. Of those teachers who selected practices at the beginning of the year and conducted adult-farmer courses, eighty per cent replied. This percentage was made up of thirty-two teachers who were contacted at the beginning of the year through interviews and twenty-eight who selected promising practices through the contact of a letter. The teachers of each group who participated in the evaluation at the end of the year amounted to 82.2 per cent and 77.8 per cent, respectively.

A total of 228 evaluations was made of the ten promising practices for an average of 22.8 teachers per practice and an average of three and eight-tenths practices per teacher. Table XXI reveals the number and percentage of teachers who evaluated each promising practice.

Explain the purpose of farm visits during the adult-farmer classes. The results of the demonstration and evaluation by Michigan teachers of adult-farmer courses of this first promising practice of on-farm instruction will be explained in this section.

Twenty-two teachers, or 36.7 per cent of the teachers in the study, evaluated this practice. The evaluation form that was sent to the teachers is shown in Appendix F. This was a standard form that was used for all of the promising practices. The frequency of use to which the teachers had put this practice in the past and during the 1958-59 year is shown in Table XXII.

TABLE XXI

NUMBER AND PERCENTAGE OF MICHIGAN TEACHERS WHO USED AND  
EVALUATED EACH PROMISING PRACTICE OF ON-FARM  
INSTRUCTION DURING 1958-59

| Promising Practices                                                                                                                    | Number of<br>Teachers<br>Evaluating | Percentage of<br>Teachers<br>Evaluating |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------|
| 1. Explain the purpose of farm visits during the adult-farmer classes                                                                  | 22                                  | 36.7                                    |
| 2. Maintain a list of potential farm visits to be made to adult farmers                                                                | 24                                  | 40.0                                    |
| 3. Discuss problems of the farm with the adult farmer and his wife together                                                            | 25                                  | 41.7                                    |
| 4. Assist the adult farmer to conduct trial plots on his farm                                                                          | 22                                  | 36.7                                    |
| 5. Analyze, with the adult farmer, the instruction of a previous adult class as it is related to his own farm                          | 24                                  | 40.0                                    |
| 6. Take the adult farmer to observe a new practice of another farmer                                                                   | 32                                  | 53.3                                    |
| 7. Analyze the adult farmer's DHIA, soil test, or other farm records                                                                   | 12                                  | 20.0                                    |
| 8. Use local production standards to assist the adult farmer to evaluate his business                                                  | 18                                  | 30.0                                    |
| 9. Take colored slides or snapshots of approved practices being adopted by the adult farmer to show the "before" and "after" situation | 19                                  | 31.7                                    |
| 10. Survey adult farmers during class to determine their viewpoints concerning farm visits                                             | 30                                  | 50.0                                    |

TABLE XXII

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "EXPLAIN THE  
PURPOSE OF FARM VISITS DURING THE ADULT-FARMER CLASSES" BY  
MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | --             | --      |
| Twice monthly            | --             | 3       |
| Monthly                  | 2              | 2       |
| Quarterly                | 2              | 3       |
| Annually                 | 11             | 13      |
| Never                    | 6              | --      |
| Total teachers reporting | 21             | 21      |

All of the teachers using this promising practice indicated that they would use this practice in the future, if it was appropriate.

The advantages of this practice that were checked on the evaluation form are summarized in Table XXIII.

The standard deviation of proportions was used to statistically summarize the response of teachers to the advantages of this practice. The Student "t" distribution was used to show significant differences of selection from chance or from what would be expected. None of the advantages of this practice was selected by a significant number of teachers, nor were any of the advantages selected by a majority of the teachers.

TABLE XXIII

ADVANTAGES OF THE PROMISING PRACTICE TO "EXPLAIN THE PURPOSES  
OF FARM VISITS DURING THE ADULT-FARMER CLASSES" ACCORDING  
TO MICHIGAN TEACHERS

| Advantages                          | Number of<br>Teachers | Percentage of<br>Teachers |
|-------------------------------------|-----------------------|---------------------------|
| Farmer responded well               | 10                    | 45.5                      |
| -Farmer learned more                | 6                     | 27.3                      |
| -Farmer adopted more farm practices | 5                     | 22.7                      |
| -Improved class instruction         | 2                     | 9.1                       |
| -Increased class attendance         | 3                     | 13.6                      |
| Used teacher's time economically    | 8                     | 36.4                      |
| -Practice performed easily          | 5                     | 22.7                      |
| Total teachers reporting            | 22                    |                           |

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

The advantage of this promising practice most frequently selected by the teachers was "Farmer responded well," with ten teachers checking it for a percentage of 45.5. Five of the seven advantages that could have been selected were checked by significantly fewer teachers than would be expected if left to chance.

The comments offered by the teachers were as follows:

1. "This practice eliminates the possibility of embarrassment on the part of both instructor and student."

2. "This could be over-sold—thinking that farm visitation has the same purpose for each farm."

3. This practice "makes following farm visits more effective."

4. Three teachers indicated that students understood better what the teacher was trying to accomplish.

5. "I feel welcome to visit the farms as often as I have time. There is always a need."

6. This practice "makes a more purposeful farm visit."

Maintain a list of potential farm visits to be made to adult farmers. This promising practice is easily done and aids the teacher to recall on-farm instruction visits that need to be conducted. The results of the demonstration and evaluation of this practice by Michigan teachers are presented in the following paragraphs.

There were twenty-four teachers, or 40.0 per cent of the teachers responding, who used and evaluated this promising practice. The frequency with which this practice had been used in previous years as compared with 1958-59 is revealed in Table XXIV.

The teachers evaluating this practice agreed unanimously that they would continue to use it in the future, when it was appropriate. The advantages of this practice, according to the teachers' evaluation, are shown in Table XXV. The advantage,

TABLE XXIV

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "MAINTAIN A LIST  
OF POTENTIAL FARM VISITS TO BE MADE TO ADULT FARMERS" BY  
MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | 3              | 3       |
| Twice monthly            | 1              | 4       |
| Monthly                  | 5              | 7       |
| Quarterly                | 2              | 4       |
| Annually                 | 5              | 5       |
| Never                    | 7              | -       |
| Total teachers reporting | 23             | 23      |

"Used teacher time economically," was selected by twenty-one, or 87.5 per cent, of the teachers evaluating the practice. The other advantages listed on the evaluation form did not apply as directly to this practice as did the advantage of teacher time, therefore, few teachers selected them as advantages.

Some remarks of the teachers about the use of this practice revealed other advantages and suggestions. One teacher said, "I found this most advantageous as a checklist for needed visits at certain times of the year." Another commented that "This can make visits more timely." "I find I am able to save many unnecessary

TABLE XXV

ADVANTAGES OF THE PROMISING PRACTICE TO "MAINTAIN A LIST OF  
POTENTIAL FARM VISITS TO BE MADE TO ADULT FARMERS"  
ACCORDING TO MICHIGAN TEACHERS

| Advantages                          | Number of Teachers | Percentage of Teachers |
|-------------------------------------|--------------------|------------------------|
| - Farmer responded well             | 3                  | 12.5                   |
| -Farmer learned more                | 3                  | 12.5                   |
| -Farmer adopted more farm practices | 5                  | 20.8                   |
| -Improved class instruction         | 3                  | 12.5                   |
| -Increased class attendance         | 6                  | 25.0                   |
| *Used teacher time economically     | 21                 | 87.5                   |
| -Practice performed easily          | 7                  | 29.2                   |
| Total teachers reporting            | 24                 |                        |

\*This advantage was selected by significantly more teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

trips and still get done what needs to be done." was the remark of a teacher about this on-farm instruction practice. One teacher was concerned because he "never could keep list correct." Another teacher wrote, "It helps set aside time for adults." One said, "More farmers are visited." Five teachers felt this practice



provided a more organized visitation program.

Discuss problems of the farm with the adult farmer and his wife together. This practice was used and evaluated by twenty-five teachers, which was 41.7 per cent of those in the study. Table XXVI contains the results of frequency of use of this practice in previous years and during 1958-59. Since this is a more time-consuming practice, one would not expect a teacher to use this practice very frequently. All of the teachers who evaluated this practice said that they would continue this practice in the future, if it was appropriate.

TABLE XXVI

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "DISCUSS PROBLEMS OF THE FARM WITH THE ADULT FARMER AND HIS WIFE TOGETHER" BY MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | -              | -       |
| Twice monthly            | -              | 2       |
| Monthly                  | 2              | 4       |
| Quarterly                | 5              | 6       |
| Annually                 | 8              | 9       |
| Never                    | 6              | -       |
| Total teachers reporting | 21             | 21      |

In answer to the question of what were the advantages of this practice, the teachers' replies are summarized in Table XXVII.

TABLE XXVII

ADVANTAGES OF THE PROMISING PRACTICE TO "DISCUSS PROBLEMS OF THE FARM WITH THE ADULT FARMER AND HIS WIFE TOGETHER" ACCORDING TO MICHIGAN TEACHERS

| Advantages                         | Number of Teachers | Percentage of Teachers |
|------------------------------------|--------------------|------------------------|
| Farmer responded well              | 11                 | 44.0                   |
| -Farmer learned more               | 5                  | 20.0                   |
| Farmer adopted more farm practices | 9                  | 36.0                   |
| -Improved class instruction        | 4                  | 16.0                   |
| -Increased class attendance        | 6                  | 24.0                   |
| Used teacher's time economically   | 8                  | 32.0                   |
| -Practice performed easily         | 5                  | 20.0                   |
| Total teachers reporting           | 25                 |                        |

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

The advantage which received the most checks by the teachers was that "Farmer responded well," from eleven, or 44.0 per cent of the teachers, who evaluated the practice. Four of the advantages were checked by so few teachers that they were considered to have

been selected significantly less than would have been expected by chance. None of the advantages was selected frequently enough to have been considered significantly more popular than would have been expected.

The teachers made several comments about this practice as follows:

1. "When working with people you must slowly gain their confidence first. One way to do this is to get the confidence of the wife."

2. "I feel this practice is very important. However, many times you are working with adult farmers in the field while the wife is in the house. If you like making night calls you could work with them together."

3. "This practice works well in some cases and others, not at all. You must know the personalities involved intimately and have their confidence."

4. "This practice provided me with better understandings of the total family's part in the success of the farmer. Many times the wife was the one who encouraged discussion of production problems such as amount of fertilizer we are using compared with other people."

5. "The adult farmer and his wife usually talk things over anyway. There seems to be little need for conference type only in special cases."

6. "Depends on how closely farmer and wife work in running farm. Some wives keep the accounts. Some farmers never consult their wives. Teacher must know the family well."

7. "I certainly would not press this practice if the farmer did not indicate he wanted his wife in on the discussion. Quite often the wife is on the scene on the farm visits and is included as a natural part of the conversation. Only a few times have I actually worked on specific problems with husband and wife together."

8. "Would open discussion when possible with, 'How are things going?' or some such remark and the wife most always would pick up from there if there were many problems."

9. "Farmer's wife involved more in the business."

10. "Greater appreciation of farm problems by each person."

11. "The family farm is based on family cooperation."

12. "It gives a better understanding of vocational agriculture to both individuals."

13. "A better teacher-farmer relationship develops as wife gains better understanding and more confidence."

14. "Wife was more cooperative, especially young couples."

Assist the adult farmer to conduct plots on his farm.

Twenty-two teachers, or 36.7 per cent of the teachers in the study, used and evaluated this practice. The frequency with which this

practice was used in 1958-59 as compared with previous years is shown in Table XXVIII.

TABLE XXVIII

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "ASSIST THE ADULT FARMER TO CONDUCT TRIAL PLOTS ON HIS FARM" BY MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | -              | 1       |
| Twice monthly            | -              | -       |
| Monthly                  | -              | -       |
| Quarterly                | 1              | 1       |
| Annually                 | 9              | 14      |
| Never                    | 6              | -       |
| Total teachers reporting | 16             | 16      |

The teachers unanimously agreed that they would continue to use this practice in the future if it was appropriate in their programs.

The advantages of this practice are shown in Table XXIX. None of the advantages were selected by enough teachers to be considered significantly more popular than would be expected by chance. However, the advantages of "Farmer responded well," "Farmer learned more," and "Farmer adopted more farm practices" were all checked by more than half of the teachers. Three of

TABLE XXIX

ADVANTAGES OF THE PROMISING PRACTICE TO "ASSIST THE ADULT  
FARMER TO CONDUCT TRIAL PLOTS ON HIS FARM"  
ACCORDING TO MICHIGAN TEACHERS

| Advantages                         | Number of<br>Teachers | Percentage<br>of Teachers |
|------------------------------------|-----------------------|---------------------------|
| Farmer responded well              | 14                    | 63.6                      |
| Farmer learned more                | 15                    | 68.2                      |
| Farmer adopted more farm practices | 13                    | 59.0                      |
| Improved class instruction         | 11                    | 50.0                      |
| -Increased class attendance        | 6                     | 27.3                      |
| -Used teacher's time economically  | 4                     | 18.2                      |
| -Practice performed easily         | 3                     | 13.6                      |
| Total teachers reporting           | 22                    |                           |

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

the advantages were selected significantly less than would be anticipated by chance.

Comments of the teachers about this promising practice were as follows:

1. "This practice works wonderfully, everything from crops to swine. Creates a great deal of interest in the community. Plots should be publicized with signs, tours, etc.. Pictures of

experimental plots and regular farm crops at same time of year provide excellent aids for winter meetings. One of the finest learning techniques at our disposal."

2. "We set up a corn growing contest. Only members having 50% or better attendance could participate. The size of plot--1 acre. The farmers set up rules and regulations. Fertilizer practices and plant population was largest area of instruction. It was on a voluntary basis so there were no problems and a great deal of instruction was achieved."

3. "I have used this and am using it on fertilization rate plots plus minimum tillage in corn. I encourage using it on from one to five acres first and let results take over from there."

4. "Do not over-obligate yourself to the extent that you cannot do a good job with the plots you put out. I plan to use plots this year for a June 'twilight' meeting."

5. "One of best types of activities."

6. "If it is a practice you want the farmers to have, make sure it is successful, otherwise it is dead in the future."

7. "All class members are not ready to conduct trial plots."

8. "This has some disadvantages as weather conditions and farmers' fields are not uniform. It helps too in the day school program--Ag students may attend during the summer meetings."

9. "The farmers must be cautioned that the results of one

test are only an indication, as different conditions beyond our control could have caused different results."

10. "I find this helps to keep me up-to-date on new practices actually used by farmers."

11. "Farmers like to try new things."

Analyze, with the adult farmer, the instruction of a previous adult class as it is related to his own farm. This promising practice is a natural activity that closely relates the classroom instruction to the on-farm instruction. It was used and evaluated by twenty-four teachers, which was 40.0 per cent of those in the study. The frequency with which teachers had used this practice during previous years and during 1958-59 is revealed in Table XXX.

The teachers were all in favor of continuing this practice with adult farmers if it was appropriate to future courses.

A summary of the advantages that the teachers selected for this practice is presented in Table XXXI. A significant number of teachers selected the advantage of "Farmer adopted more farm practices" when using this practice. A majority of the teachers considered "Farmer responded well," and "Farmer learned more" as advantages of this practice. There were four advantages selected by so few teachers that they were selected significantly less than expected.

Several teachers made comments about this practice. One



TABLE XXI

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "ANALYZE WITH THE ADULT FARMER, THE INSTRUCTION OF A PREVIOUS ADULT CLASS AS IT IS RELATED TO HIS OWN FARM" BY MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | 1              | 3       |
| Twice monthly            | 1              | 2       |
| Monthly                  | 1              | 2       |
| Quarterly                | 6              | 8       |
| Annually                 | 9              | 5       |
| Never                    | 2              | -       |
| Total teachers reporting | 20             | 20      |

teacher said that "Many farmers can see what is wrong with the neighbors' farms but not their own." "I found it was hard for a farmer to remember where he got many of the ideas he was putting into practice," was the remark of another teacher. Another teacher indicated that the practice, "Seemed to work best after the farmer had time to see the results of the farm practice." Still another teacher wrote, "This practice seemed to fit all phases of instruction."

Take the adult farmer to observe a new practice of another farmer. This practice was the most popular of the ten in the study.

TABLE XXXI

ADVANTAGES OF THE PROMISING PRACTICE TO "ANALYZE WITH THE ADULT FARMER, THE INSTRUCTION OF A PREVIOUS ADULT CLASS AS IT IS RELATED TO HIS OWN FARM" ACCORDING TO MICHIGAN TEACHERS

| Advantages                          | Number of Teachers | Percentage of Teachers |
|-------------------------------------|--------------------|------------------------|
| Farmer responded well               | 14                 | 58.3                   |
| Farmer learned more                 | 16                 | 66.7                   |
| *Farmer adopted more farm practices | 17                 | 70.8                   |
| -Improved class instruction         | 6                  | 25.0                   |
| -Increased class attendance         | 5                  | 20.8                   |
| -Used teacher's time economically   | 7                  | 29.2                   |
| -Practice performed easily          | 1                  | 4.2                    |
| Total teachers reporting            | 24                 |                        |

\*This advantage was selected by significantly more teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

There were thirty-two teachers, or 53.3 per cent of the teachers in the study, who used and evaluated this practice. The first question of frequency of use of this practice in previous years and during the 1958-59 year is summarized in Table XXXII.

It was the unanimous decision of the teachers that they would use this practice in the future, if it were appropriate.

TABLE XXXII

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "TAKE THE ADULT  
FARMER TO OBSERVE A NEW PRACTICE OF ANOTHER FARMER"  
BY MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | -              | -       |
| Twice monthly            | -              | -       |
| Monthly                  | 1              | 7       |
| Quarterly                | 9              | 10      |
| Annually                 | 9              | 7       |
| Never                    | 5              | -       |
| Total teachers reporting | 24             | 24      |

The advantages of this practice as seen by the teachers who used it are shown in Table XXXIII. "Farmer learned more" and "Farmer adopted more farm practices" were the advantages of this practice that were selected significantly more than would be expected, by the teachers who used the practice. A majority of the teachers considered "Farmer responded well" as an advantage. Three advantages were selected by significantly fewer teachers than would be expected if left to chance.

The following valuable comments were offered by the teachers.

TABLE XXXIII

ADVANTAGES OF THE PROMISING PRACTICE TO "TAKE THE ADULT FARMER  
TO OBSERVE A NEW PRACTICE OF ANOTHER FARMER" ACCORDING TO  
MICHIGAN TEACHERS

| Advantages                          | Number of<br>Teachers | Percentage<br>of Teachers |
|-------------------------------------|-----------------------|---------------------------|
| Farmer responded well               | 21                    | 65.6                      |
| *Farmer learned more                | 23                    | 71.9                      |
| *Farmer adopted more farm practices | 25                    | 78.1                      |
| Improved class instruction          | 11                    | 34.4                      |
| -Increased class attendance         | 9                     | 28.1                      |
| -Used teacher's time economically   | 9                     | 28.1                      |
| -Practice performed easily          | 6                     | 18.8                      |
| Total teachers reporting            | 32                    |                           |

\*These advantages were selected by significantly more teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

1. "Works well in conjunction with trial plots."
2. "Do not take in only those farms that are really endowed with financial assistance. Take in common farmers and try to include those farms visited out of your class members."
3. "The time of the trip is very important."
4. "Many farmers will visit neighbors but will not get at

1. The first step is to identify the problem or question that needs to be answered.

2. The second step is to gather relevant information and data.

3. The third step is to analyze the information and data.

4. The fourth step is to develop a solution or answer.

5. The fifth step is to implement the solution or answer.

6. The sixth step is to evaluate the results of the solution or answer.

7. The seventh step is to communicate the results of the solution or answer.

8. The eighth step is to reflect on the process and learn from the experience.

9. The ninth step is to apply the knowledge and skills gained to other situations.

10. The tenth step is to continue to learn and grow throughout the process.

11. The eleventh step is to seek feedback and support from others.

12. The twelfth step is to stay motivated and persistent.

13. The thirteenth step is to celebrate successes and learn from failures.

14. The fourteenth step is to maintain a positive attitude and mindset.

15. The fifteenth step is to be open to new ideas and perspectives.

16. The sixteenth step is to be flexible and adaptable.

17. The seventeenth step is to be proactive and take initiative.

18. The eighteenth step is to be a team player and collaborate with others.

19. The nineteenth step is to be a lifelong learner and stay up-to-date on the latest information.

20. The twentieth step is to be a positive influence on others and contribute to the community.

basic facts, such as cost, unless you help them."

5. "You can accomplish more this way and let the farmer find out the experience of other farmers--some of the small details that are so important. We can teach a farmer more if we organize and let the person with experience give the facts."

Analyze the adult farmer's DHIA, soil test, or other farm records. Only twelve used this practice, which accounted for 20.0 per cent of the teachers in the study. The frequency with which the teachers used this practice during previous years as well as during 1958-59 is shown in Table XXXIV.

TABLE XXXIV

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "ANALYZE THE ADULT FARMER'S DHIA, SOIL TEST, OR OTHER FARM RECORDS" BY MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | -              | -       |
| Twice monthly            | -              | -       |
| Monthly                  | 2              | 2       |
| Quarterly                | -              | 5       |
| Annually                 | 4              | 4       |
| Never                    | 5              | -       |
| Total teachers reporting | 11             | 11      |



All the teachers were interested in continuing the use of this practice in the future where it would be appropriate.

Table XXXV reveals the summary of advantages that teachers felt this practice had for their adult-farmer course. Two advantages of this practice were checked by a higher percentage

TABLE XXXV

ADVANTAGES OF THE PROMISING PRACTICE TO "ANALYZE THE ADULT FARMER DHIA, SOIL TEST, OR OTHER FARM RECORDS" ACCORDING TO MICHIGAN TEACHERS

| Advantages                          | Number of Teachers | Percentage of Teachers |
|-------------------------------------|--------------------|------------------------|
| *Farmer responded well              | 11                 | 91.7                   |
| Farmer learned more                 | 9                  | 75.0                   |
| *Farmer adopted more farm practices | 11                 | 91.7                   |
| Improved class instruction          | 3                  | 25.0                   |
| Increased class attendance          | 4                  | 33.3                   |
| Used teacher's time economically    | 4                  | 33.3                   |
| Practice performed easily           | 4                  | 33.3                   |
| Total teachers reporting            | 12                 |                        |

\*These advantages were selected by significantly more teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

of teachers than under any other practice. Eleven out of the twelve teachers, or 91.7 per cent of the teachers, indicated that



the advantages of this practice were that "Farmer responded well" and that "Farmer adopted more farm practices." The advantage, "Farmer learned more," although not selected by a significant number of teachers, was selected by a majority.

Comments of the teachers were that, "One must be careful when working with records to see that the information is kept confidential in some cases. Few farmers will open records if they aren't sure you are responsible enough to retain the information," "I analyzed eight members' dairy programs. The activity took a total of twenty-four hours of time or an average of three hours per member," and "Gives you something specifically to work on."

Use local production standards to assist the adult farmer to evaluate his business. Eighteen teachers, or 30.0 per cent of them, used this practice and made an evaluation of it. Table XXXVI summarizes the frequency with which the teachers used this practice in previous years and during 1958-59.

The teachers were unanimous in their desire to continue the use of this practice in the future, if appropriate to the course.

The advantages of this practice as indicated by the teachers evaluating it are revealed in Table XXXVII. The advantage receiving the most checks for this practice was "Farmer responded well," with fourteen teachers, or 77.8 per cent of those

TABLE XXXVI

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "USE LOCAL  
PRODUCTION STANDARDS TO ASSIST THE ADULT FARMER TO  
EVALUATE HIS BUSINESS" BY MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | -              | -       |
| Twice monthly            | -              | -       |
| Monthly                  | 2              | 3       |
| Quarterly                | 3              | 7       |
| Annually                 | 11             | 7       |
| Never                    | 1              | -       |
| Total teachers reporting | 17             | 17      |

who used this practice, indicating this response.

There were no comments from the teachers concerning this practice.

Take colored slides or snapshots of approved practices being adopted by the adult farmer to show the "before" and "after" situation. Nineteen teachers participated in the evaluation of this practice. This amounted to 31.7 per cent of the teachers in the study. Table XXXVIII offers a summary of the frequency with which teachers used this practice in previous years and during 1958-59.

TABLE XXXVII

ADVANTAGES OF THE PROMISING PRACTICE TO "USE LOCAL PRODUCTION  
STANDARDS TO ASSIST THE ADULT FARMER TO EVALUATE  
HIS BUSINESS" ACCORDING TO MICHIGAN TEACHERS

| Advantages                         | Number of<br>Teachers | Percentage<br>of Teachers |
|------------------------------------|-----------------------|---------------------------|
| *Farmer responded well             | 14                    | 77.8                      |
| Farmer learned more                | 6                     | 33.3                      |
| Farmer adopted more farm practices | 13                    | 72.2                      |
| Improved class instruction         | 7                     | 38.9                      |
| -Increased class attendance        | 2                     | 11.1                      |
| -Used teacher's time economically  | 1                     | 5.5                       |
| -Practice performed easily         | 1                     | 5.5                       |
| Total teachers reporting           | 18                    |                           |

\*This advantage was selected by significantly more teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

TABLE XXXVIII

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "TAKE COLORED SLIDES OR SNAPSHOTS OF APPROVED PRACTICES BEING ADOPTED BY THE ADULT FARMER TO SHOW THE 'BEFORE' AND 'AFTER' SITUATION" BY MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | -              | -       |
| Twice monthly            | -              | 1       |
| Monthly                  | 1              | 2       |
| Quarterly                | 4              | 7       |
| Annually                 | 8              | 5       |
| Never                    | 2              | -       |
| Total teachers reporting | 15             | 15      |

All the teachers agreed that they would continue using this practice in the future with their adult farmers when it was appropriate.

The teachers indicated the advantages of this practice which are summarized in Table XXXIX. The advantage of the practice selected by a significant number of teachers was that it "Improved class instruction." Also, a majority of teachers selected the advantage of the practice of "Farmer responded well." The advantage "Used teacher's time economically" was selected by significantly fewer teachers than would be expected by chance



TABLE XXXIX

ADVANTAGES OF THE PROMISING PRACTICE TO \*TAKE COLORED SLIDES OR SNAPSHOTS OF APPROVED PRACTICES BEING ADOPTED BY THE ADULT FARMER TO SHOW THE 'BEFORE' AND 'AFTER' SITUATION" ACCORDING TO MICHIGAN TEACHERS

| Advantages                         | Number of Teachers | Percentage of Teachers |
|------------------------------------|--------------------|------------------------|
| Farmer responded well              | 12                 | 63.2                   |
| Farmer learned more                | 11                 | 57.9                   |
| Farmer adopted more farm practices | 8                  | 42.1                   |
| *Improved class instruction        | 14                 | 73.7                   |
| Increased class attendance         | 6                  | 31.6                   |
| -Used teacher's time economically  | 3                  | 15.8                   |
| Practice performed easily          | 8                  | 42.1                   |
| Total teachers reporting           | 19                 |                        |

\*This advantage was selected by significantly more teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

-This advantage was selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

and is definitely not considered an advantage by the evaluating group.

Comments offered by the teachers were as follows: "One of the fine tools at our disposal," and "Requires work to develop completeness of series of slides on a particular situation

from start to finish." Another teacher wrote, "One of the best methods in instruction." Still another said, "Tends to lengthen the number of meetings held in the summer months--this is a year around program."

Survey adult farmers during class to determine their viewpoints concerning farm visits. A copy of a suggested survey form which was sent to the teachers during the 1958-59 year may be examined by turning to Appendix E.

This practice was evaluated by thirty teachers or 50. per cent of those taking part in the study. The frequency of use of this practice by the teachers during previous years and during 1958-59 is shown in Table XL.

All of the teachers planned to continue the use of this practice in the future when it is appropriate for their course.

The advantages of this practice that were selected by the teachers are summarized and presented in Table XLI. None of the advantages of this practice received enough checks to be considered significant advantages. However, the advantage of "Farmer responded well" was selected by a majority of the teachers. There were four advantages that were checked by so few teachers that they were found to be selected significantly less than would be expected if left to chance.

Seven comments were offered about the practice. One teacher wrote that he, "Found a healthy attitude on the part of

TABLE XL

FREQUENCY OF USE OF THE PROMISING PRACTICE TO "SURVEY ADULT FARMERS DURING CLASS TO DETERMINE THEIR VIEWPOINTS CONCERNING FARM VISITS" BY MICHIGAN TEACHERS

| Frequency of Use         | Previous Years | 1958-59 |
|--------------------------|----------------|---------|
| Weekly                   | -              | -       |
| Twice monthly            | 1              | 2       |
| Monthly                  | -              | -       |
| Quarterly                | 2              | 5       |
| Annually                 | 10             | 21      |
| Never                    | 15             | -       |
| Total teachers reporting | 28             | 28      |

adult farmers concerning visits--some seek help while others consider it more in a social light." Another teacher's comment was that, "I felt it boosted the relationship between the farmers and myself enough to increase attendance ten per cent. A closer feeling was held between all." "Helps plan visits better," was a teacher's remark. Still another said, "Farmers become more familiar with vocational agriculture program." One teacher wrote, "My experience has been that adults appreciate visits when there is a need for them." Still another remark was made that the practice "Helped me discover my position or role."



TABLE XLI

ADVANTAGES OF THE PROMISING PRACTICE TO "SURVEY ADULT FARMERS  
DURING CLASS TO DETERMINE THEIR VIEWPOINTS  
CONCERNING FARM VISITS" ACCORDING TO  
MICHIGAN TEACHERS

| Advantages                          | Number of Teachers | Percentage of Teachers |
|-------------------------------------|--------------------|------------------------|
| Farmer responded well               | 16                 | 53.3                   |
| -Farmer learned more                | 3                  | 10.0                   |
| -Farmer adopted more farm practices | 4                  | 13.3                   |
| -Improved class instruction         | 8                  | 26.7                   |
| -Increased class attendance         | 3                  | 10.0                   |
| Used teacher's time economically    | 12                 | 40.0                   |
| Practice performed easily           | 12                 | 40.0                   |
| Total teachers reporting            | 30                 |                        |

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

### Summary of Chapter

This chapter which has presented the data from the demonstrational study of ten promising practices of on-farm instruction of adult farmers is summarized as follows:

1. Eighty-one teachers selected promising practices at the beginning of the demonstration year, which was in 1958-59. Sixty-

six teachers, or 80 per cent, including six teachers who did not teach adult farmers in 1958-59, finished the study year by sending in an evaluation of the promising practices they used.

2. A total of 228 evaluations were received from Michigan teachers, for an average of 22.8 evaluations for each of the ten practices and an average of three and eight-tenths practices being evaluated per teacher.

3. None of the advantages of the promising practice to "Explain the purpose of farm visits during the adult-farmer classes" was selected by a sufficient number of the teachers to be significant, or even to make a majority.

4. The promising practice to "Maintain a list of potential farm visits to be made to adult farmers" had the significant advantage, according to the teachers, of using the teacher's time economically.

5. The promising practice to "Discuss problems of the farm with the adult farmer and his wife together," had no advantages which were significant, nor did a majority of teachers select any one advantage.

6. The promising practice to "Assist the adult farmer to conduct trial plots on his farm," had three advantages that were checked by a majority of the teachers, although none was significant. Those advantages were that the farmer responded well, learned more, and adopted more farm practices.

7. The promising practice to "Analyze with the adult farmer the instruction of a previous adult class as it is related to his own farm," had the significant advantage, according to the teachers, that the farmers adopted more farm practices. A majority of the teachers considered this practice as having two other advantages--the farmer responded well and learned more.

8. The promising practice to "Take the adult farmer to observe a new practice of another farmer," had the significant advantages, according to the teachers, of the farmer learning more and adopting more farm practices. In addition, a majority of the teachers attributed to this practice the advantage of farmers responding well to its use.

9. The promising practice to "Analyze the adult farmer's DHIA, soil test, or other farm records" had the significant advantages of the farmer responding well to the practice and adopting more farm practices. A majority of the teachers also indicated that farmers learned more when the teacher used this practice.

10. The promising practice to "Use local production standards to assist the adult farmer to evaluate his business" had the significant advantage of the farmers responding well to the practice. A majority of teachers selected the advantage of this practice that farmers adopted more farm practices.

11. The promising practice to "Take colored slides or

snapshots of approved practices being adopted by the adult farmer to show the 'before' and 'after' situation" had the significant advantage of improving class instruction. Two other advantages were selected by a majority of the teachers. They were that farmers responded well to its use and learned more.

12. Although none of the advantages of the promising practice to "Survey adult farmers during class to determine their viewpoints concerning farm visits" was selected by a significant number of teachers, a majority did consider that it had the advantage that farmers responded well to its use.

13. All ten practices were unanimously accepted by the teachers who evaluated them as practices that they would continue to use in the future, if the practices were appropriate.

14. The evaluation of the advantages of all the promising practices is presented in a composite form in Table XLII. The following points are presented under the advantages ascribed to promising practices by the teachers using them on a demonstrational basis.

a. "Farmer responded well"—Promising practice Numbers 7 and 8 were considered to have this advantage to a significant degree. However, a majority of the teachers considered practice Numbers 4, 5, 6, 9, and 10 to have this advantage also.

b. "Farmer learned more"—Promising practice Number 6 was

selected by a significant number of teachers for this advantage. A majority of the teachers considered that practice Numbers 4, 5, 7, and 9 possessed this advantage.

c. "Farmer adopted more farm practices"--Promising practices selected to a significant degree, by the teachers who used them, as having this advantage were Numbers 5, 6, and 7. Promising practice Numbers 4 and 8 were selected for this advantage by a majority of the teachers using them.

d. "Improved class instruction"--The promising practice Number 9 was selected by a significant number of teachers for this advantage. No other practice was selected by a majority of the teachers as having this advantage.

e. "Increased class attendance"--None of the promising practices was selected for this advantage by a significant number nor a majority of the teachers who used them.

f. "Used teacher's time economically"--Promising practice Number 2 possessed this advantage as evidenced by the fact that a significant number of teachers selected it. None of the other practices was selected by a majority of the teachers for this advantage.

g. "Practice performed easily"--None of the promising practices was selected by a significant number nor a majority of the teachers as having this advantage.

TABLE XLII

A SUMMARY SHOWING THE EVALUATION OF THE ADVANTAGES OF THE PROMISING PRACTICES OF ON-FARM INSTRUCTION  
FOR ADULT FARMERS ACCORDING TO MICHIGAN TEACHERS

| Advantages                         | Promising Practices |     |    |    |     |     |     |     |     |    |
|------------------------------------|---------------------|-----|----|----|-----|-----|-----|-----|-----|----|
|                                    | 1                   | 2   | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10 |
| Farmer responded well              | 10                  | -3  | 11 | 14 | 14  | 21  | *11 | *14 | 12  | 16 |
| Farmer learned more                | -6                  | -3  | -5 | 15 | 16  | *23 | 9   | 6   | 11  | -3 |
| Farmer adopted more farm practices | -5                  | -5  | 9  | 13 | *17 | *25 | *11 | 13  | 8   | -4 |
| Improved class instruction         | -2                  | -3  | -4 | 11 | -6  | 11  | 3   | 7   | *14 | -8 |
| Increased class attendance         | -3                  | -6  | -6 | -6 | -5  | -9  | 4   | -2  | 6   | -3 |
| Used teacher's time economically   | 8                   | *21 | 8  | -4 | -7  | -9  | 4   | -1  | -3  | 12 |
| Practice performed easily          | -5                  | -7  | -5 | -3 | -1  | -6  | 4   | -1  | 8   | 12 |
| Number of teachers using           | 22                  | 24  | 25 | 22 | 24  | 32  | 12  | 18  | 19  | 30 |

\*These advantages were selected by significantly more teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

-These advantages were selected by significantly fewer teachers than would be expected by chance as measured by the Student "t" distribution at the five per cent level.

## CHAPTER VI

### SUMMARY, CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS FOR FURTHER STUDY

This chapter will consist of a brief summary of the reasons for this study, the method of conducting this study, and the results of the data obtained. The conclusions of the study will then be presented, based on the hypotheses formulated at the beginning of the study. Next, the implications of this study will be presented concerning individual on-farm instruction of adult farmers. Finally, suggestions for further study in the area of on-farm instruction of adult farmers will be listed.

#### Summary of the Study

The purpose of conducting this study of individual on-farm instruction of adult farmers in vocational agriculture was to determine the practices that were being used by teachers, the effectiveness of those practices as evaluated by teachers, and then to identify, develop, and evaluate some promising practices that might prove effective.

The importance of the adult-farmer course in vocational agriculture has been highlighted by the following beliefs:

1. The main responsibility for management and leadership in agriculture rests on adult farmers, not farm youth.

2. Adult farmers can and must learn new farming methods and farming practices as the technology of agriculture progresses.

3. Because managerial control is decentralized in farming, public agencies are the most logical avenues through which to provide continuing education for adult farmers.

4. The public school system is strategically located, both geographically and sociologically, to make a major contribution to the education of adult farmers.

5. The teacher of vocational agriculture, because of his broad, general training in technical agriculture and related fields, as well as his training as an educator, is in a position to help bridge the gap between the agricultural scientist and the adult farmer.

6. The teacher of vocational agriculture, mainly responsible to the local school administration and board of education, can act as an impartial coordinator of various efforts to provide education for adult farmers of his community, whether those efforts come from the agencies of business, cooperatives, government, industry, or individuals.

Individual on-farm instruction of adult farmers is a vital part of the adult-farmer course. The following tenets



are stressed in this respect.

1. Classroom instruction, to be functional and vocational in nature, must be based on the farming problems of the students.

2. The subject matter which is taught about farming problems is of much more value when it is adapted to and applied on the farms.

The need for a study of the practices of providing on-farm instruction for adult farmers might be summarized as follows:

1. Informal surveys of two groups of Michigan teachers of adult-farmer courses revealed that an area of adult-farmer education in which a study was very necessary was in individual on-farm instruction.

2. In a search of the literature of various branches of agricultural education, only a limited amount of research seemed to have been devoted to on-farm instruction of adult farmers.

The procedure used in this study of on-farm instruction of adult farmers is briefly described below.

1. A checklist of 125 individual on-farm instruction practices was developed and sent to all Michigan teachers who planned to offer adult-farmer courses during 1957-58. There were 138 teachers involved. One hundred and eight checklists were returned for a 78.2 per cent response.

2. The checklist was also sent to seventy outstanding teachers of on-farm instruction of adult farmers from thirteen

states of the Central Region. Fifty-six checklists were returned for an 80 per cent response.

3. The data from the Michigan teachers and the outstanding teachers from the Central Region were compared and ten promising practices were identified. Eighty-one teachers selected certain promising practices from this list at the beginning of the demonstration year, which was 1958-59. There were 228 evaluations received from the sixty who taught adult-farmer courses, for an average of three and eight-tenths practices being evaluated per teacher.

A summary of the findings of the first phase of the study which was the collection of information about practices of on-farm instruction of adult farmers, and the evaluation of the effectiveness of the practices by teachers is as follows:

1. The typical Michigan teacher who took part in the study was from a one-man department on schedule plan D, teaching four high school classes of vocational agriculture, with one conference and one adult-farmer period in the high school schedule, with a high school student enrollment of between thirty-one and fifty, teaching one adult-farmer course in farm management, who was paid one-seventh or less of his salary for adult-farmer work, having eleven to twenty adult farmers enrolled, and ten class meetings per adult-farmer course.

2. The average experience of teaching adult-farmer courses

by the Michigan teachers in the study was five and nine-tenths years.

3. The average experience in teaching adult-farmer courses by outstanding teachers of the Central Region was six and eight-tenths years.

4. The average number of on-farm visits conducted by Michigan teachers per year was 56.3, with a range of from eight to three-hundred visits. This amounted to an average of two and three-tenths visits per adult student in an average sized adult-farmer class.

5. The average number of on-farm visits conducted by the outstanding teachers of the Central Region was ninety-two per year, with a range of from eighteen to three hundred and fifty.

6. Twenty-five practices from the checklist survey among Michigan teachers were used by 75 per cent or more of the teachers and given an average composite score of 3.00 or more, which is an indication of their effectiveness.

7. Sixty-three practices from the checklist survey from the outstanding teacher group were used by 75 per cent or more teachers and had a composite score of 3.00 or over.

8. Thirty-eight practices from the checklist were found to be used more frequently and evaluated higher by the outstanding teachers of the Central Region as compared with the Michigan

teachers to a significantly higher level.

The results of the evaluation of the ten promising practices of individual on-farm instruction of adult farmers by Michigan teachers during the 1958-59 year are summarized as follows:

Promising Practice 1. "Explain the purpose of farm visits during the adult-farmer classes." None of the suggested advantages was selected by enough teachers to be significant or to receive a majority.

Promising Practice 2. "Maintain a list of potential farm visits to be made to adult farmers." The advantage selected by a significant number of teachers who used it was that the practice used the teacher's time economically.

Promising Practice 3. "Discuss problems of the farm with the adult farmer and his wife together." None of the suggested advantages of this practice was selected by sufficient teachers to receive a majority or to be significant.

Promising Practice 4. "Assist the adult farmer to conduct trial plots on his farm." Three advantages of this practice were selected by a majority of the teachers using the practice. Those advantages were that the farmer responded well, learned more, and adopted more farm practices.

Promising Practice 5. "Analyze with the adult farmer the instruction of a previous adult class as it is related to his

own farm." A significant number of teachers selected the advantage of this practice that farmers adopted more farm practices. A majority of the teachers selected two other advantages of this practice also. Those advantages were that the farmer responded well and learned more.

Promising Practice 6. "Take the adult farmer to observe a new practice of another farmer." According to a significant number of teachers who used this practice, it had the advantage of assisting the farmer to learn more and adopt more farm practices. A majority of the teachers also selected the advantage that the farmers responded well to its use by the teachers.

Promising Practice 7. "Analyze the adult farmer's DHIA, soil test, or other farm records." A significant number of teachers indicated that the farmer responded well to the practice and adopted more farm practices. A majority of the teachers also selected the advantage of this practice that the farmer learned more.

Promising Practice 8. "Use local production standards to assist the adult farmer to evaluate his business." Teachers who used this practice indicated in significant numbers that the advantage of this practice was that farmers responded well to its use by the teacher. A majority of the teachers selected the advantage of the practice that farmers adopted more farm practices.

Promising Practice 9. "Take colored slides or snapshots of approved practices being adopted by the adult farmer to show the 'before' and 'after' situation." Improvement of class instruction was an advantage selected by a significant number of the teachers who had used the practice. Two other advantages were selected by a majority of the teachers, which were that the farmers responded well and learned more when the teacher used this practice.

Promising Practice 10. "Survey adult farmers during class to determine their viewpoints concerning farm visits." None of the suggested advantages was selected by a significant number of the teachers using this practice. However, a majority of the teachers did attribute to this practice the advantage that farmers responded well when the teacher used it.

It was the unanimous decision of all teachers who used each of the ten promising practices that they would use these practices in the future when appropriate to the course.

### Conclusions of the Study

The conclusions are based on the data collected concerning individual on-farm instruction of adult farmers and will be arranged according to the hypotheses formulated at the beginning of the study.

Hypothesis 1. Practices of individual on-farm instruction being used by Michigan teachers of adult-farmer courses vary in their effectiveness according to the evaluation of those teachers.

The data collected from the Michigan teachers concerning practices of individual on-farm instruction of adult farmers revealed that there was a wide divergence in effectiveness of the various practices. Twenty-five practices from the checklist of 125 were used by 75 per cent or more of the teachers reporting and these were evaluated as highly effective. Outstanding teachers of on-farm instruction of adult farmers from the Central Region evaluated sixty-three of the practices on the checklist as being highly effective. According to the evidence obtained from this study there does exist a wide range of effectiveness between the various practices of individual on-farm instruction of adult farmers as evaluated by the teachers. Therefore, this hypothesis was substantiated.

Hypothesis 2. There are some practices of individual on-farm instruction that are being used frequently and are considered to be effective by some outstanding teachers of adult-farmer courses in the Central Region which are not being used or used as frequently by Michigan teachers of adult-farmer courses.

Based on the data from outstanding teachers of the Central Region in comparison with data collected from Michigan teachers, there were thirty-eight practices of individual on-farm instruction

of adult farmers that were used more frequently and given a higher evaluation to a statistically significant degree by the outstanding teachers of the Central Region. Several other practices had been used by only a small percentage of the Michigan teachers. However, no practices were presented that had not been used by at least a limited number of the Michigan teachers. Based on the findings of this study, it is concluded that Hypothesis 2 has been substantiated.

Hypothesis 3. Michigan teachers who use or who more frequently use certain practices of individual on-farm instruction of adult farmers will identify certain advantages of these practices.

According to the evaluation of the promising practices by the Michigan teachers who used them during the 1958-59 year, all ten of the promising practices had certain advantages. Some practices were attributed advantages by a higher percentage of teachers than were other practices. Promising practices that were selected by a statistically significant number of teachers for certain advantages were:

2. Maintain a list of potential farm visits to be made to adult farmers.
5. Analyze, with the adult farmer, the instruction of a previous adult class as it is related to his own farm.
6. Take the adult farmer to observe a new practice of another farmer.
7. Analyze the adult farmer's DHIA, soil test, or other farm records.
8. Use local production standards to assist the adult



farmer to evaluate his business.

9. Take colored slides or snapshots of approved practices being adopted by the adult farmer to show the "before" and "after" situation.

In addition, a majority of the teachers who used the practices selected the following practices as having certain advantages:

4. "Assist the adult farmer to conduct trial plots on his farm," and 10. "Survey adult farmers during class to determine their viewpoints concerning farm visits." A majority of the teachers also selected other advantages of the promising practice Numbers five, six, seven, eight, and nine referred to above. Only practice Numbers 1. "Explain the purposes of farm visits during the adult-farmer classes," and 3. "Discuss problems of the farm with the adult farmer and his wife together," contained no advantages that were selected by a majority of teachers who used them. However, each of these two practices had an advantage that was selected by 45.4 per cent and 44.4 per cent of the teachers, respectively.

Based on the findings of this part of the study, Hypothesis 3 has been substantiated.

### Implications of the Study

The implications of the study presented in this section are based on the data obtained from the checklist surveys of practices of individual on-farm instruction by Michigan teachers of adult-

farmer courses, by outstanding teachers of on-farm instruction of adult farmers from the Central Region, and from the demonstrational study of the promising practices by Michigan teachers during 1958-59. These implications are also founded on the beliefs held by the investigator, and upon eleven years of experience in teaching twenty adult-farmer courses.

More effective individual on-farm instruction of adult farmers may be provided if the following suggestions are considered, and applied where they are appropriate.

1. Individual on-farm instruction of adult farmers will be more effective if it is closely integrated with instruction given in the classroom, as indicated by the results of this study.

On-farm instruction is usually beneficial prior to, during, and after classroom instruction has been given on a certain subject. A more individualized analysis of classroom instructional information with a specific farmer having a specific problem usually results in more efficient learning and more desirable change of behavior.

On the other hand, it has been the feeling of the investigator that the omission of the classroom instruction and the provision of instruction only on the individual basis usually leaves much to be desired. The adult farmer may not be given as thorough an explanation of the general background of the instructional information from which he could solve similar problems

in the future. Neither does he hear class members discuss their experiences from which he might gain further insight.

During classroom instruction it seems that continual reference might be made as to how this instructional information can be applied on the farm and how the teacher can assist the students on their farms with more specific instruction.

2. Effective individual on-farm instruction of adult farmers requires that sufficient time be devoted to it.

According to the data from this study, five of the promising practices were selected by a majority or more of the teachers as having the advantage of the farmers learning more or adopting more farm practices. In other words, the practices were considered effective. At the same time, these same promising practices were selected by significantly fewer teachers than would be expected by chance for the advantage of using the teacher's time economically. Therefore, if the practices are educationally effective but are not considered by the teachers to utilize their time economically, the teacher is not likely to use such practices unless he is allotted scheduled time. If the teacher is expected to give this instruction outside of his regular hours of employment without remuneration, the amount of instruction is likely to be inadequate. Teachers who already have a period in their school schedule allotted for on-farm instruction of adult farmers may lose such time unless they rigorously follow the habit of using that time to provide effective

on-farm instruction to adult farmers.

Although not investigated in this study, it is suggested that the school administrator provide assistance in evaluating, with the teacher, the on-farm instruction of adult farmers if it is not now being evaluated. The analysis of detailed monthly mileage reports would be helpful in such an evaluation. Such factors as the number of visits made to adult farmers, the frequency of these visits, and the type of instruction provided could be a basis for the evaluation.

According to data collected from the Michigan teachers, the average teacher was visiting his students slightly more than twice per year. It has been the experience of the investigator that two visits would barely allow the teacher to become oriented to the farm program and the problems of the adult farmer during the various seasons, say nothing of providing instruction in skills, assisting to plan new practices and management procedures, analyzing information provided in class meetings, or evaluating new farm practices that have been tried by the adult farmer.

3. Individual on-farm instruction will be more effective if the adult farmers understand the general purposes and procedures used during visits.

Although the promising practice resembling this implication was not selected by a majority of the teachers as possessing specific advantages, it is the feeling of the investigator that

a brief explanation might be given to the adult farmers at the beginning of the course, and perhaps periodically as the year progresses, concerning the purposes and procedures of individual on-farm instruction that will be followed. The teacher may wish to explain that visits are made for such purposes as getting acquainted with the farming program, analyzing instructional information presented in class meetings, demonstrating skills that could not be shown in the classroom, and evaluating farm practices that were tried by the adult farmer. Such general procedures as when the teacher is available for on-farm instruction of adult farmers, how he can be contacted, and how often he can visit individuals, could be explained. If this type of orientation is provided, probably the teacher's on-farm visit time will be more efficiently used, the instruction will be more effective, and the adult farmers will be more likely to use this educational service.

4. The teaching of specific practices or skills should be provided during most on-farm instruction visits.

Several findings of this study imply that individual on-farm instruction of adult farmers will be more effective if specific practices or skills are dealt with. Certainly there is a need for farm visits of an exploratory nature in which the teacher becomes acquainted, establishes rapport, and discusses general problems with the adult farmer. This type of visit



should usually be performed at the beginning of a course, especially with a new adult-farmer student. Those teachers who make farm visits only once a year or so are likely to be conducting a rather large percentage of this type of visits. After the initial exploratory visit is conducted, the teacher should usually place emphasis upon providing specific instruction while on the farm.

Instruction on specific practices or skills during on-farm visits will require that the teacher make careful plans with the adult farmer before the visit, and that he adequately prepare himself for giving the instruction. He might assist the farmer to analyze farm problems so that the need is recognized by the adult farmer for the actual teaching of a practice or skill. The investigator believes that as this approach to on-farm instruction becomes established, farmers will realize its value and provide even more opportunities through which the teacher may be able to provide individual on-farm instruction in a more effective manner.

5. Teachers could possibly provide more effective individual on-farm instruction on certain subjects by involving the wife, as well as the adult farmer, during the visit.

The results of the study of the promising practice of discussing problems with the adult farmer and his wife together, although not having a large number of teachers selecting specific advantages, did bring numerous affirmative remarks from the

teachers concerning the value of this practice. Instruction in such areas as records, management problems, and future farm plans is usually of interest to wives. Wives are frequently consulted on such subjects by the adult farmer in the teacher's absence. Therefore, unless the wives are involved in the instruction it may not be as effective as the teacher might otherwise expect. Some activities such as record keeping may actually be performed by wives. Providing instruction in these areas with the participation of the wife is likely to be more effective.

6. The teacher could assist the adult farmer to evaluate farm practices that he has tried or anticipates trying, thus providing more effective on-farm instruction.

This statement has been substantiated by the survey. Outstanding teachers assisted adult farmers in the evaluating of farm practices during visits to a significantly higher rate than did the Michigan teachers.

The learning process is not complete until the student has evaluated the new farm practice that he has studied or tried, and revised his conclusions. This is especially true in such a complex field of knowledge as that which is encountered by the adult farmer. Even before the farmer tries a new farm practice he must evaluate experiments of commercial and governmental agencies, experiences of farmers, and recommendations from various sources. After the adult farmer has attempted a new farm practice



he is again faced with the proposition of whether he should adopt the new idea permanently, continue on a trial basis, or reject the idea as unadaptable to his program.

It would seem to the investigator that the evaluation of farm practices by the adult farmer himself must, at times, be a difficult and bewildering task. Conflicting recommendations, varied results of experiments and experiences, and a multitude of factors on his own farm must be carefully considered before a decision is justified. If the adult farmer arrives at the wrong conclusion concerning the adoption or rejection of a particular farm practice, he may either lose the advantage of the early adoption of a profitable practice or suffer loss from adopting an unprofitable practice. Likewise, if the results of a trial are misinterpreted, causing him to form the wrong conclusion, the adult farmer is again the loser. The teacher certainly has an excellent opportunity to give effective instruction during this process of evaluating new practices that are being considered or that have been tried by the adult farmer. Frequently the most suitable place to provide such individualized assistance is on the farm.

#### Suggestions for Further Study

During the process of developing and conducting this study a need for other research studies in on-farm instruction of adult

farmers was revealed. The following is a list of suggestions for further study.

1. The checklist of practices of individual on-farm instruction of adult farmers, with some revision and validation, might be useful as a self-evaluation form which could be used periodically by teachers of adult-farmer courses.

2. Other promising practices of individual on-farm instruction of adult farmers could be studied on a demonstrational or experimental basis, in addition to the ten that were used in this study.

3. The opinions and reactions of adult farmers concerning practices of individual on-farm instruction could be studied.

4. A study to determine the relationship between individual on-farm instruction of adult farmers and their participation in current and future adult-farmer courses might be of considerable interest and value.

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2. The second section focuses on the role of communication in achieving organizational goals. It argues that clear and consistent communication is vital for ensuring that all team members are aligned and working towards the same objectives. The text provides examples of effective communication strategies, such as regular meetings and the use of shared platforms. It also highlights the importance of listening to feedback and being open to change.

3. The third part of the document addresses the challenges of managing resources efficiently. It notes that organizations often face constraints in terms of time, money, and personnel. To overcome these challenges, the text suggests implementing a systematic approach to resource allocation. This involves identifying key areas of need and prioritizing them based on their impact on the organization's mission. The text also discusses the importance of monitoring resource usage and making adjustments as needed.

4. The fourth section explores the benefits of collaboration and teamwork. It states that working together can lead to increased productivity and innovation. The text describes various ways to foster a collaborative environment, including encouraging open communication and providing opportunities for team building. It also mentions the importance of recognizing and rewarding team achievements to boost morale and motivation.

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• The first step in the process of creating a new product is to identify a market need. This is often done through market research, which involves gathering information about the target market and its needs. Once a market need has been identified, the next step is to develop a concept for a new product that meets this need. This is often done through brainstorming and prototyping. Once a concept has been developed, the next step is to create a business plan for the new product. This plan should outline the costs of production, the pricing strategy, and the marketing strategy. Once a business plan has been created, the next step is to secure funding for the new product. This can be done through a variety of methods, including venture capital, angel investors, and crowdfunding. Once funding has been secured, the next step is to manufacture the new product. This is often done through a contract manufacturer. Once the product has been manufactured, the next step is to launch the product into the market. This is often done through a combination of direct sales and marketing efforts. Finally, the product should be monitored for sales and customer feedback, and adjustments should be made as needed.

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3. The third part of the document discusses the ongoing monitoring and evaluation of the project. It highlights the need for continuous communication and collaboration between all stakeholders involved. This section also provides a timeline for the project, with key milestones and deadlines clearly defined.

4. The fourth part of the document discusses the future of the organization. It outlines the long-term goals and vision, as well as the strategies to achieve them. This section also provides a summary of the key findings and recommendations from the project, ensuring that the organization is well-prepared for the future.

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1. The first part of the paper discusses the importance of the study of the history of the United States. It is argued that a knowledge of the past is essential for a full understanding of the present and for the development of a sound policy for the future. The author points out that the study of history is not only a means of learning about the past, but also a means of learning about the human mind and the human condition.

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## **APPENDICES**

Olivet, Michigan  
May 6, 1958

Louis M. Sasman, Chief, Agricultural Education, 177  
Rural Division, State Board of Vocational and Adult Education  
State Office Building  
Madison 2, Wisconsin

Dear Sir:

A study is being conducted, under the direction of Dr. Harold Byram of Michigan State University, concerning on-farm instruction of adult-farmers. The study will be divided into three phases:

1. Michigan teachers of adult-farmer classes will be surveyed to determine what practices of on-farm instruction they are using and their evaluation of the practices.
2. Several Michigan teachers will be asked to select and use, on a trial basis in 1958-59, two or three of the newer and more promising practices that they have not used previously.
3. An evaluation of the newer practices will be sought from the teachers at the end of the 1958-59 school year. The adult-farmer students in the classes of these teachers will also be surveyed.

Would you assist me in this study? Please select five (5) Wisconsin teachers of adult-farmer classes whom you and your staff consider to be outstanding in the on-farm instructional phase of the adult-farmer program, and send me their names and addresses. The reason for surveying five teachers from your state and several other states in the North Central Region is to provide a basis for selecting the new and promising practices which Michigan teachers will be encouraged to try. It is also hoped that your teachers will suggest other on-farm instructional practices for adult-farmers which can be added to the check list.

To aid you in selecting these teachers, some of the following criteria should be considered, if the information is available:

- a. The number of approved farm practices adopted by the adult-farmer students is outstanding.
- b. The observations made and reports received by the state staff, concerning the activities in on-farm instruction for adult-farmer students, show the teachers to be outstanding.
- c. The number of visits made to adult students and/or the miles traveled by the teachers are considered adequate.
- d. Adequate time has been provided in the teachers' school schedules in which to conduct on-farm instruction for adults.

The results of this survey from your teachers will be kept anonymous and no comparison will be made between the states involved.

If you could send these names and addresses to me in the enclosed envelope, as soon as convenient, the teachers could be contacted before the summer vacation season begins. Your effort and cooperation are very much appreciated.

Sincerely yours

Rolf Moeckel  
Teacher of Vocational Agriculture



APPENDIX B

Olivet, Michigan  
May 12, 1958 178

Dear \_\_\_\_\_,

Several Michigan teachers of adult-farmer classes have expressed an interest in improving the effectiveness of farm visits with their adult students. This is the first phase of a study being made to determine what some of the more effective practices of on-farm instruction for individual adult students are.

Would you assist me in this study by checking the enclosed list of practices and returning it to me within a few days. I will greatly appreciate your help on this study, and believe that the results of the survey will be of value to you. It will require about 30 minutes of your time.

The teachers who have checked this list so far have "never used" several of the practices, so don't feel out of place if you have not used many of them. Your check list will be kept anonymous, so feel free with your responses.

Please read the instructions above the check list very carefully. You will find a stamped, addressed envelope enclosed. Thank you.

Sincerely yours

Rolf Moeckel  
Teacher of Vocational Agriculture

To Teachers of Adult Classes in Agriculture:

There is no more important part of a program of vocational agriculture than on-farm instruction. This is particularly true in instruction of adult farmers. Yet the literature reveals very little in the form of crystallized experience and theory as to the most effective techniques for conducting on-farm instruction.

It is fortunate, indeed, that Mr. Moeckel has undertaken this study which endeavors to identify the more effective practices and to get them tested in typical situations. I commend this inquiry to you for your careful consideration and assistance.

Yours sincerely,

(Signed)

H. M. Byram, Chairman  
Agricultural Education Service

Olivet, Michigan  
May 19, 1958

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To Teachers of Adult Classes in Agriculture:

Dear Mr. \_\_\_\_\_;

A study is being conducted, under the direction of Dr. Harold Byram of Michigan State University, concerning on-farm instruction of adult-farmers. The study will be divided into three phases:

1. Michigan teachers of adult-farmer classes will be surveyed to determine what practices of on-farm instruction they are using and their evaluation of the practices.
2. Several Michigan teachers will be asked to select and use, on a trial basis in 1958-59, two or three of the newer and more promising practices that they have not used previously.
3. An evaluation of the newer practices will be sought from the teachers at the end of the 1958-59 school year. The adult-farmer students in the classes of these teachers will also be surveyed.

In order to obtain a more complete list of on-farm instructional practices used for adult farmers, as well as an evaluation of them, I have asked your state supervisor and the state supervisors from the twelve other states in the North Central Region to name five of their outstanding teachers in this phase of the adult program. Since you were one of those named from your state, let me congratulate you.

Would you assist me in this study by completing the check list and returning it in a few days in the enclosed envelope. This will require about 30 minutes of your time. You are especially encouraged to add practices to the list. Your reply will be kept anonymous and no comparisons will be made between the states involved, so feel free with your responses. Your effort and cooperation are very much appreciated. Thank you.

Sincerely yours,

Rolf Moeckel  
Teacher of Vocational Agriculture

RM:pm  
Encl. 2

## SOME PROMISING PRACTICES OF ON-FARM INSTRUCTION FOR ADULT FARMERS

## Directions:

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In order to determine the value of the practices, please start using those that you have selected as soon as possible during 1958-59, and use the practices where they apply as often as possible, unless they prove unsatisfactory.

The columns at the right side of the page are for your convenience. You might check "frequency of use" and write in remarks in the columns on a weekly or monthly basis.

The five suggestions under each practice need not be used but are only included to give you ideas.

Further information can be given on some of these practices if you wish.

| Practices and suggestions to consider when using                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Freq.<br>of use | Remarks |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| <ol style="list-style-type: none"> <li>1. <u>Explain the purpose of farm visits during the adult farmer classes.</u> <ol style="list-style-type: none"> <li>a. If the farmer understands that farm visits by the teacher are a part of the course, the teacher will be more welcome and can be more effective.</li> <li>b. Explain that the teacher can make classes more practical after getting acquainted with the farms.</li> <li>c. Explain that visits are to help the student apply to his farm the facts learned in class.</li> <li>d. Encourage requests for visits if you desire.</li> <li>e. Give examples of what was done on farms of some farmers in the class.</li> <li>f.</li> <li>g.</li> </ol> </li> <li>2. <u>Maintain a list of potential farm visits to be made to adult farmers.</u> <ol style="list-style-type: none"> <li>a. Record on a clipboard, items to be observed, discussed, obtained, etc. at each farm.</li> <li>b. The list can make the teacher's school period for farm visits more efficient.</li> <li>c. The list aids the teacher to prepare adequately and not forget details after arrival at the farm.</li> <li>d. Can provide a check list to determine what subjects farmers wish to be visited about.</li> <li>e. May list newcomers or non-students to be visited.</li> <li>f.</li> <li>g.</li> </ol> </li> <li>3. <u>Discuss problems of the farm with the adult farmer and his wife together.</u> <ol style="list-style-type: none"> <li>a. Guide the couple to do most of planning, with teacher acting as a resource person.</li> <li>b. May want to record a minimum of plans.</li> <li>c. Keep information about the farm confidential.</li> <li>d. Assist them to analyze their farm to determine the extent and nature of the problems.</li> <li>e. In future visits encourage them to work out their plan and assist them to evaluate their progress.</li> <li>f.</li> </ol> </li> </ol> |                 |         |





| Practices and suggestions to consider when using                                                                                                                                                                                                                                                                                                           | Freq.<br>of use | Remarks<br>181 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| 4. <u>Assist the adult farmer to conduct trial plots on his farm.</u>                                                                                                                                                                                                                                                                                      |                 |                |
| a. Help the farmer understand that it is a demonstration of a practice and not an experiment.                                                                                                                                                                                                                                                              |                 |                |
| b. Types of demonstrations--                                                                                                                                                                                                                                                                                                                               |                 |                |
| (1) Crops like corn for grain, corn silage, hay, oats or wheat, etc..                                                                                                                                                                                                                                                                                      |                 |                |
| (2) Livestock tests like two groups of feeder pigs or milk cows.                                                                                                                                                                                                                                                                                           |                 |                |
| (3) Cultural practices like fertilizer, varieties, tillage, plant population, chemical weed killers, time of treatment, etc..                                                                                                                                                                                                                              |                 |                |
| Note: It is best to limit plots to one or two types of enterprises per year.                                                                                                                                                                                                                                                                               |                 |                |
| c. Assist the farmer to organize the plots so that comparison between the usual and the approved practice can be made.                                                                                                                                                                                                                                     |                 |                |
| d. Keep careful records of amounts, dates, kinds, location in the field, and progress of plots.                                                                                                                                                                                                                                                            |                 |                |
| e. Assist farmer to measure yields as follows:                                                                                                                                                                                                                                                                                                             |                 |                |
| (1) Corn in 42" rows use 1/100 acre or 124 ft., 40" rows use 131 ft., 38" rows use 137 ft., 36" rows use 145 ft., Could out distances in half and use 1/200 of an acre. Pick the plot, weigh the sample, and shell one pint of corn in glass jar, seal the jar and take to local elevator for moisture test. Refer to the MSU folder F-67 for the formula. |                 |                |
| (2) Small grains by dividing 43,560 by width of combine in feet and take 1/100 of the answer. Weigh samples and calculate results.                                                                                                                                                                                                                         |                 |                |
| (3) Corn silage--weigh 1/400 or 1/800 of an acre and figure tonage, air dry for dry matter calculation.                                                                                                                                                                                                                                                    |                 |                |
| (4) Hay--Measure out three samples at random of 45 1/2" square each. The total of these three sample areas equals 1/1000 acre.                                                                                                                                                                                                                             |                 |                |
| Note: On all plots the average of two or three tests from each plot will give much more reliable results.                                                                                                                                                                                                                                                  |                 |                |
| f.                                                                                                                                                                                                                                                                                                                                                         |                 |                |
| 5. <u>Analyze, with the adult farmer, the instruction of a previous adult class as it is related to his own farm.</u>                                                                                                                                                                                                                                      |                 |                |
| a. Aid farmer to understand that most approved practices need to be adapted to fit his farm.                                                                                                                                                                                                                                                               |                 |                |
| b. Carry on farm visits some of pertinent materials from previous classes as well as some of the helpful visual aids, if possible.                                                                                                                                                                                                                         |                 |                |
| c. Have class meetings well distributed over the school year so that follow-up visits can be made to interested farmers soon after the class.                                                                                                                                                                                                              |                 |                |
| d. Assist the farmer by analyzing with him rather than by telling him exactly what you recommend.                                                                                                                                                                                                                                                          |                 |                |
| e. Encourage a small scale trial of a practice the first year.                                                                                                                                                                                                                                                                                             |                 |                |



| Practices and suggestions to consider when using                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Freq.<br>of use | Remarks<br>182 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| <p>6. <u>Take the adult farmer to observe a new practice of another farmer.</u></p> <ul style="list-style-type: none"> <li>a. The farmer visited may be able to do effective teaching of your student also.</li> <li>b. It gives him proof--eyes, ears, smell, feel, and thus he learns faster.</li> <li>c. Make arrangements with the farmer to be visited.</li> <li>d. Select the farmer to be visited according to his attitudes and understanding of the practice to be observed.</li> <li>e. Avoid arousing envy or jealousy toward the farmer to be visited.</li> <li>f.</li> </ul> <p>7. <u>Analyze the adult farmer's DHIA, soil test, or other farm records.</u></p> <ul style="list-style-type: none"> <li>a. Could assist the farmer to analyze one or more of the following records:             <ul style="list-style-type: none"> <li>(1) DHIA records for cow families, culling, calving interval, feeding practices, etc..</li> <li>(2) Soil tests to explain terms, recommendations, possible results of recommendations.</li> <li>(3) Sow testing results.</li> <li>(4) Market slips of hogs, cattle, grain, milk, etc..</li> <li>(5) Farm management area reports from MSU.</li> <li>(6) Disease reports from veterinarians, or state department.</li> <li>(7) The production and practices of an entire enterprise such as dairy, corn, etc..</li> <li>(8) The farm records which are reported in the income tax, such as income and expenses.</li> <li>(9) The entire farm business comprising a combination of the above.</li> <li>(10)</li> </ul> </li> <li>b. Remember that the farmer has much of this information but wants to understand the logic behind recommendations so that he can reason out the practice before adopting it.</li> <li>c. Recommendations made by specialists who are not familiar with the farm or the farmer may not produce desirable results without some explanation or adaptation.</li> <li>d. After the material is analyzed, the farmer should be encouraged to form conclusions and take action.</li> <li>e. Use summary of these test results in a night class.</li> <li>f.</li> <li>g.</li> </ul> |                 |                |

# APPENDIX D CONCLUDED

| Practices and suggestions to consider when using                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Freq.<br>of use | Remarks<br>183 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| <p>8. <u>Use local production standards to assist the adult farmer to evaluate his business.</u></p> <ul style="list-style-type: none"> <li>a. Information might be collected as farm visits are made during harvest season, after income taxes are figured, etc..</li> <li>b. The information might be gathered during an adult class.</li> <li>c. Results of demonstration plots might be used.</li> <li>d. County production figures might be available from the Extension Service, Soil Conservation Service, Farmers Home Administration, Agricultural Stabilization Committee, etc..</li> <li>e. Be careful to keep most of the information from individuals confidential.</li> <li>f.</li> </ul> <p>9. <u>Take colored slides or snapshots of approved practices being adopted by the adult farmer to show the "before" and "after" situation.</u></p> <ul style="list-style-type: none"> <li>a. Select a good vantage point and use for both shots.</li> <li>b. Have permission to take "before" shot to avoid embarrassing him.</li> <li>c. Don't embarrass farmer by using pictures before groups unless permitted.</li> <li>d. Use at farm groups, H. S. classes where applicable to subject, civic clubs, etc..</li> <li>e. Display in exhibits or a display case for colored slides.</li> <li>f.</li> </ul> <p>10. <u>Survey adult farmers during class to determine their viewpoints concerning farm visits.</u></p> <ul style="list-style-type: none"> <li>a. Gives the teacher direction for planning his farm visits.</li> <li>b. Informs the teacher of misunderstandings farmers have about farm visits.</li> <li>c. Provides the teacher with proof that the farmers desire on-farm instruction.</li> <li>d. Gives teacher on-farm instruction requests that can be worked on during his slack days.</li> <li>e. Could list approved practices in the survey which had been studied to determine if they were adopted or if more assistance was desired.</li> <li>f.</li> </ul> <p>Note: A sample survey form will be sent to you later in the school year.</p> |                 |                |



**APPENDIX E**  
**ADULT FARM VISIT SURVEY**

Name \_\_\_\_\_ Route No. \_\_\_\_\_ Post Office \_\_\_\_\_

**184**

Your answers on this sheet will aid the teacher to use his farm visit time to better advantage and give more assistance where desired.

1. What should be the purpose of farm visits by the teacher? (Check all that apply)

- a. Get acquainted with you \_\_\_\_\_
- b. Get acquainted with the farm \_\_\_\_\_
- c. Identify farm problems \_\_\_\_\_
- d. Teach new skills \_\_\_\_\_
- e. Help make farm plans \_\_\_\_\_
- f. Help put new ideas to use on the farm \_\_\_\_\_
- g. Help analyze new ideas used on the farm \_\_\_\_\_
- h. Others \_\_\_\_\_

2. Are you interested in having the teacher visit your farm? Yes. \_\_\_ No. \_\_\_

Remarks \_\_\_\_\_

3. How often would you like to be visited if the teacher has the time?

Monthly \_\_\_ Quarterly \_\_\_ At your request \_\_\_ Other \_\_\_\_\_

4. What time of day is best for visits? Early A.M. \_\_\_ Late A.M. \_\_\_

Early P.M. \_\_\_ Late P.M. \_\_\_ Other \_\_\_\_\_ Does not matter \_\_\_

5. Would you like to be notified before the teacher visits? Yes. \_\_\_ No. \_\_\_

6. Activities you wish to be visited on:

\*

\* Any number of activities under No. 6 that are related to instruction given or to be given in the near future, such as: fertilizing crops, feeding dairy cows, mixing concrete, planning crop rotations, etc..

## APPENDIX F

## EVALUATION OF PROMISING PRACTICES OF ON-FARM INSTRUCTION FOR ADULT FARMERS

- Practice Used \_\_\_\_\_
1. How frequently had you used this practice in your adult farmer program in previous years? Weekly \_\_ Twice Monthly \_\_ Monthly \_\_ Quarterly \_\_ Annually \_\_ Never \_\_.
  2. How frequently have you used this practice in your adult farmer program this year? Weekly \_\_ Twice monthly \_\_ Monthly \_\_ Quarterly \_\_ Annually \_\_.
  3. Will you continue to use this practice with adult farmers in the future, if appropriate? Yes \_\_ No \_\_ Remarks \_\_\_\_\_
  4. What were the advantages of this practice? Farmer responded well \_\_, Farmer learned more \_\_, Farmer adopted more farm practices \_\_, Improved class instruction Increased class attendance \_\_, Used teacher's time economically \_\_, Practice performed easily \_\_, Others \_\_\_\_\_
  5. Comments on back of slip would be appreciated: Describe any precautions, disadvantages, difficulties, and how practice was performed.

- Plan A Two consecutive 60-minute periods of class instruction per day, 5 days per week, for 1 year; and one 60-minute period of instruction per day, 5 days per week, for the other years.
- Plan B Two consecutive 60-minute periods of class instruction per day, 2 days per week, and one 60-minute period per day, 3 days per week, for each class, each year.
- Plan C Two consecutive 45-minute periods of class instruction per day, 5 days per week, for each class, each year.
- Plan D Sixty minutes of class instruction per day, 5 days per week, for each class, each year, provided that there is in operation a program of systematic group instruction for out-of-school young farmers and/or adult farmers for not less than a total of 50 clock hours during the year.
- Plan E Twenty-eight clock hours of scheduled class instruction in agriculture during each school month for each class per year.
- Plan F Two consecutive periods of class instruction 5 days per week for 2 years and one period of class instruction 5 days per week for the other year or years.
- Plan G Two consecutive class periods of instruction 5 days per week for one year and one class period of instruction 5 days per week for the other years provided that each vocational agriculture student receives at least 12 clock hours of individual on-farm instruction per year with at least one clock hour of such supervision and instruction by the teacher during each 4 month period of the calendar year, such supervision and instruction to be given on the farm where the student is developing his farming program.
- Plan H Two hundred and fifty minutes net of class instruction per week for each class for each year of the program provided that each vocational agriculture student receives at least 12 clock hours of individual on-farm instruction per year with at least one clock hour of such supervision and instruction by the teacher during each 4 month period of the calendar year, such supervision and instruction to be given on the farm where the student is developing his farming program.





## APPENDIX H

TEACHERS OF ADULT-FARMER COURSES IN 1957-58  
WHO REPLIED TO THE CHECKLIST SURVEY

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| <u>Teachers</u>     | <u>Schools</u> | <u>Teachers</u>    | <u>Schools</u> |
|---------------------|----------------|--------------------|----------------|
| Douglas Hitchcock   | Addison        | Howard H. Lahring  | Centreville    |
| *Guy Elder          | Allegan        | Clyde B. Ray       | Charlotte      |
| Maynard Christensen | Alma           | Lester J. Howard   | Cheboygan      |
| John Jocham         | Almont         | Robert G. LaPrad   | Chesaning      |
| A. Rex Sieting      | Ashley         | Paul C. Smith      | Climax         |
| J. P. Marzec        | Athens         | Volney Flegel      | Concord        |
| Walter L. Bomeli    | Bangor         | William Dunavin    | Dexter         |
| Jack Sanderson      | Bath           | Roy W. Wallis      | Durand         |
| *William Yant       | Bay City       | Jack E. Newsted    | East Jordan    |
| Maxwell Brown       | Bay City       | Clifford Furness   | Elkton         |
| *Kenneth Robbins    | Beaverton      | Jack R. Hobson     | Fairgrove      |
| William Garvey      | Bellevue       | John D. Anibal     | Gaines         |
| Clare Dunworth      | Blanchard      | Maurice Land       | Galien         |
| Maurice W. Fritch   | Brown City     | Burleigh Schroeder | Gaylord        |
| Ellis J. May        | Buchanan       | Edward Noll        | Goodrich       |
| Andrew A. Wuotila   | Buckley        | Ronald K. Richmond | Grand Ledge    |
| Ralph Sill          | Byron          | Peter W. Zaldokas  | Grant          |
| Keith Griffin       | Camden         | William P. Eick    | Harbor Beach   |
| *James Sutherland   | Caro           | *Roy Schultheiss   | Harbor Springs |
| Walter L. Green     | Carson City    | *Lloyd Colburn     | Hesperia       |
| John P. Coady       | Cedar Springs  | Garrell A. Adler   | Holland        |
| F. Linton Smith     | Cement City    | Roy A. Miller      | Hopkins        |
| Marshall Richards   | Central Lake   | Don Miles          | Hudson         |

## APPENDIX H CONTINUED

TEACHERS OF ADULT-FARMER COURSES IN 1957-58  
WHO REPLIED TO THE CHECKLIST SURVEY

188

| <u>Teachers</u>    | <u>Schools</u> | <u>Teachers</u>     | <u>Schools</u> |
|--------------------|----------------|---------------------|----------------|
| Clayton Preisel    | Imlay City     | Jack Kreiner        | Owendale       |
| John C. Greenan    | Ithaca         | Duane W. Dalgleigh  | Owosso         |
| Warren Parsons     | Jackson        | Melvin Simonton     | Peck           |
| D. E. Spotts       | Jonesville     | Marvin H. Wassenaar | Pellston       |
| Ralph M. White     | Kent City      | K. Dale McAlvey     | Petoskey       |
| James Pelham       | Kinde          | Howard L. Thompson  | Pigeon         |
| Alfred Weaver      | Kingsley       | Robert E. Jewell    | Pinconning     |
| Charles Mumby      | Kingston       | Clare E. Monroe     | Pittsford      |
| William Rountree   | Lake City      | Carl Stuewer        | Plainwell      |
| Donald Kelly       | Lowell         | Thomas O'Connor     | Posen          |
| Carl J. Hagen      | Lowell         | Lloyd L. Lober      | Ravenna        |
| *James W. Dittmer  | Ludington      | Glenn Welch         | Reading        |
| Robert C. Hatfield | Marcellus      | Earl J. French      | Reese          |
| Leon Alger         | Mason          | Larry Davis         | Rudyard        |
| Edward R. Cole     | Mayville       | Howard H. Lytle     | Saginaw        |
| James Lilley       | Montague       | Carl Nelson         | St. Charles    |
| *LaVerne Spotts    | Morenci        | Murvale Huston      | St. Clair      |
| Chester Clark      | New Lothrop    | Alton Ealy          | Saline         |
| Leo A. Scheffler   | North Adams    | H. E. Bryant        | Sand Creek     |
| Charles Snyder     | Onkama         | Louis Reuter        | Sandusky       |
| Norman H. Bless    | Onsted         | Lyle Plews          | Saranac        |
| Oliver Juengel     | Otisville      | Douglas Claflin     | Sheridan       |
| Albert D. Ackley   | Ovid           | Glenn Nesman        | Springport     |

TEACHERS OF ADULT-FARMER COURSES IN 1957-58  
WHO REPLIED TO THE CHECKLIST SURVEY

| <u>Teachers</u>     | <u>Schools</u> |
|---------------------|----------------|
| Kenneth M. Baker    | Stanton        |
| William A. Miller   | Sunfield       |
| Robert R. Reasner   | Tawas City     |
| Paul Burns          | Tecumseh       |
| Ronald Stevens      | Three Oaks     |
| Wilbur McMath       | Traverse City  |
| Jack Tyrrell        | Ubly           |
| Robert L. Colestock | Unionville     |
| Lawrence Stebbins   | Waldron        |
| Harold Samuelson    | Wayland        |
| W. Conrad Search    | Webberville    |
| Richard B. Wight    | Whittemore     |
| W. E. Drake         | Williamston    |
| Lester Bollwahn     | Williamston    |
| Ronald Fritch       | Yale           |
| Herbert DeKleine    | Zeeland        |

\*Checklist was not included in the summary.



[illegible]



[illegible]

|                                                                                                                       |          | If you check here, check no more columns |                                                                            | USE OF PRACTICE<br>If you check columns b, c, or d, always check one column for its effectiveness. |                                             | EFFECTIVENESS IF USED<br>If you have checked columns b, c, or d, check one of these columns according to the effectiveness of the practice on entire adult-farmer program. |                                                                                   |                                             |                                                             |
|-----------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------|
|                                                                                                                       |          | a.<br>NEVER USED                         | b.<br>USE FRE-<br>QUENTLY                                                  | c.<br>USE OCCA-<br>SION-<br>ALLY                                                                   | d.<br>DIS-<br>CON-<br>TINUED<br>USING       | e.<br>EFFEC-<br>TIVE                                                                                                                                                       | f.<br>PARTLY<br>EFFEC-<br>TIVE                                                    | g.<br>NOT<br>EFFEC-<br>TIVE                 | h.<br>EFFEC-<br>TIVENESS<br>UNCERTAIN                       |
| PRACTICES                                                                                                             |          | Check if not used with adult students    | Check if used in half or more of occasions where applicable during 1957-58 | Check if used but in less than half of occasions where applicable during 1957-58                   | Check if used previously but not in 1957-58 | Check if its use gave desirable results in half or more of occasions where used                                                                                            | Check if use gave desirable results but in less than half of occasions where used | Check if its use gave no desirable re-sults | Check if not certain whether its use gave desirable results |
| (Please check appropriate column(s) for all practices.)                                                               | No Reply |                                          |                                                                            |                                                                                                    |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                             |
| G. EVALUATING FARM PRACTICES DURING VISITS                                                                            |          |                                          |                                                                            |                                                                                                    |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                             |
| 1. Analyze discussion of previous class in relation to adult student's own farm.                                      | 4        | 13                                       | 35                                                                         | 47                                                                                                 | 1                                           | 39                                                                                                                                                                         | 38                                                                                | 0                                           | 5                                                           |
| 2. Ask questions to help adult student evaluate his farm practices.                                                   | 3        | 4                                        | 59                                                                         | 34                                                                                                 | 0                                           | 61                                                                                                                                                                         | 27                                                                                | 0                                           | 5                                                           |
| 3. Assist adult student to analyze new practices as they affect entire farm.                                          | 3        | 17                                       | 37                                                                         | 43                                                                                                 | 0                                           | 33                                                                                                                                                                         | 38                                                                                | 1                                           | 8                                                           |
| 4. Take adult student to observe new practices of other farmers.                                                      | 2        | 25                                       | 24                                                                         | 47                                                                                                 | 2                                           | 45                                                                                                                                                                         | 22                                                                                | 0                                           | 4                                                           |
| 5. Analyze with adult why practice succeeded.                                                                         | 3        | 11                                       | 32                                                                         | 53                                                                                                 | 1                                           | 43                                                                                                                                                                         | 37                                                                                | 0                                           | 5                                                           |
| 6. Analyze with adult why practice failed.                                                                            | 4        | 14                                       | 33                                                                         | 49                                                                                                 | 0                                           | 44                                                                                                                                                                         | 31                                                                                | 1                                           | 6                                                           |
| 7. Keep written record of new practices being initiated by adult students.                                            | 2        | 53                                       | 16                                                                         | 28                                                                                                 | 1                                           | 16                                                                                                                                                                         | 23                                                                                | 0                                           | 5                                                           |
| 8. Keep record of new practices being discontinued by adult students.                                                 | 3        | 76                                       | 4                                                                          | 14                                                                                                 | 3                                           | 4                                                                                                                                                                          | 10                                                                                | 3                                           | 1                                                           |
| 9. Analyze, with adult student, practices recommended by government agencies.                                         | 2        | 13                                       | 35                                                                         | 48                                                                                                 | 2                                           | 23                                                                                                                                                                         | 50                                                                                | 2                                           | 8                                                           |
| 10. Analyze, with adult student, practices recommended in magazines and farm papers.                                  | 2        | 14                                       | 36                                                                         | 46                                                                                                 | 2                                           | 32                                                                                                                                                                         | 44                                                                                | 2                                           | 4                                                           |
| 11. Analyze, with adult student, a new practice adopted by a neighbor.                                                | 3        | 12                                       | 35                                                                         | 49                                                                                                 | 1                                           | 36                                                                                                                                                                         | 43                                                                                | 0                                           | 5                                                           |
| 12. Use M.S.U. Area Farm Management Report to assist adult student to evaluate his business.                          | 2        | 36                                       | 26                                                                         | 34                                                                                                 | 2                                           | 20                                                                                                                                                                         | 34                                                                                | 1                                           | 5                                                           |
| 13. Use local production standards to assist adult student to evaluate his business.                                  | 2        | 22                                       | 35                                                                         | 41                                                                                                 | 0                                           | 37                                                                                                                                                                         | 34                                                                                | 0                                           | 5                                                           |
| 14. Periodically analyze and re-state future plans of the business with adult student and wife jointly.               | 3        | 59                                       | 10                                                                         | 25                                                                                                 | 3                                           | 10                                                                                                                                                                         | 21                                                                                | 0                                           | 4                                                           |
| 15. Periodically analyze and re-state future plans of the business with adult student and son(s) jointly.             | 5        | 44                                       | 13                                                                         | 34                                                                                                 | 4                                           | 16                                                                                                                                                                         | 25                                                                                | 1                                           | 5                                                           |
| 16. Periodically analyze and re-state future plans of the business with entire family.                                | 4        | 60                                       | 11                                                                         | 21                                                                                                 | 4                                           | 15                                                                                                                                                                         | 14                                                                                | 0                                           | 3                                                           |
| 17. Others:                                                                                                           |          |                                          |                                                                            |                                                                                                    |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                             |
| 18.                                                                                                                   |          |                                          |                                                                            |                                                                                                    |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                             |
| H. EVALUATING INSTRUCTIONAL PRACTICES USED BY THE TEACHER                                                             |          |                                          |                                                                            |                                                                                                    |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                             |
| 1. Keep record of name, date, and mileage for farm visits to adult students.                                          | 6        | 3                                        | 84                                                                         | 7                                                                                                  | 0                                           | 61                                                                                                                                                                         | 19                                                                                | 2                                           | 9                                                           |
| 2. Analyze mileage records of visits to adult students to determine how frequently visited.                           | 3        | 32                                       | 38                                                                         | 26                                                                                                 | 1                                           | 41                                                                                                                                                                         | 20                                                                                | 0                                           | 3                                                           |
| 3. Record requests from adult students to determine interest in being visited.                                        | 4        | 63                                       | 20                                                                         | 13                                                                                                 | 0                                           | 14                                                                                                                                                                         | 16                                                                                | 1                                           | 2                                                           |
| 4. Keep record of adult students who were absent from farm when visited.                                              | 2        | 45                                       | 38                                                                         | 14                                                                                                 | 1                                           | 30                                                                                                                                                                         | 11                                                                                | 4                                           | 7                                                           |
| 5. Determine number of miles traveled per adult student visited.                                                      | 3        | 68                                       | 19                                                                         | 5                                                                                                  | 5                                           | 14                                                                                                                                                                         | 6                                                                                 | 1                                           | 3                                                           |
| 6. Attempt to analyze adult student's response as instruction is given.                                               | 8        | 13                                       | 47                                                                         | 31                                                                                                 | 1                                           | 38                                                                                                                                                                         | 23                                                                                | 3                                           | 14                                                          |
| 7. Inquire how much benefit materials were that were left at a previous visit.                                        | 5        | 33                                       | 15                                                                         | 47                                                                                                 | 0                                           | 21                                                                                                                                                                         | 27                                                                                | 3                                           | 11                                                          |
| 8. Observe performance of a skill taught on a previous visit.                                                         | 5        | 24                                       | 31                                                                         | 38                                                                                                 | 2                                           | 29                                                                                                                                                                         | 35                                                                                | 2                                           | 3                                                           |
| 9. Observe adult student's application of a skill which was taught during a previous class.                           | 6        | 12                                       | 40                                                                         | 41                                                                                                 | 1                                           | 38                                                                                                                                                                         | 39                                                                                | 1                                           | 3                                                           |
| 10. Analyze enrollments to determine the influence of visits made before courses start.                               | 3        | 35                                       | 40                                                                         | 22                                                                                                 | 0                                           | 33                                                                                                                                                                         | 20                                                                                | 2                                           | 7                                                           |
| 11. Inquire about the action suggested at the previous visit.                                                         | 4        | 19                                       | 32                                                                         | 43                                                                                                 | 2                                           | 28                                                                                                                                                                         | 35                                                                                | 3                                           | 9                                                           |
| 12. Analyze class attendance to determine whether adult students were in attendance who requested certain subjects.   | 1        | 20                                       | 47                                                                         | 32                                                                                                 | 0                                           | 44                                                                                                                                                                         | 29                                                                                | 1                                           | 5                                                           |
| 13. Analyze class discussions to determine whether adult students taught skills on the farm are more active in class. | 3        | 46                                       | 26                                                                         | 25                                                                                                 | 0                                           | 25                                                                                                                                                                         | 17                                                                                | 4                                           | 5                                                           |
| 14. Take photographs of approved practices to show "before" and "after" situations.                                   | 3        | 53                                       | 16                                                                         | 26                                                                                                 | 2                                           | 29                                                                                                                                                                         | 9                                                                                 | 0                                           | 4                                                           |
| 15. Others:                                                                                                           |          |                                          |                                                                            |                                                                                                    |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                             |
| 16.                                                                                                                   |          |                                          |                                                                            |                                                                                                    |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                             |

(Have you checked all the practices and evaluated the effectiveness of those used? Please do not omit any.)



APPENDIX I

170-172

APPENDIX I

190-193

| Number of Years Experience Teaching Adult-Farmer Classes | Total Adult Visits Made Per Year (Approximately) |
|----------------------------------------------------------|--------------------------------------------------|
| 1                                                        | 1                                                |
| 2                                                        | 2                                                |
| 3                                                        | 3                                                |
| 4                                                        | 4                                                |
| 5                                                        | 5                                                |
| 6                                                        | 6                                                |
| 7                                                        | 7                                                |
| 8                                                        | 8                                                |
| 9                                                        | 9                                                |
| 10                                                       | 10                                               |
| 11                                                       | 11                                               |
| 12                                                       | 12                                               |
| 13                                                       | 13                                               |
| 14                                                       | 14                                               |
| 15                                                       | 15                                               |
| 16                                                       | 16                                               |
| 17                                                       | 17                                               |
| 18                                                       | 18                                               |
| 19                                                       | 19                                               |
| 20                                                       | 20                                               |
| 21                                                       | 21                                               |
| 22                                                       | 22                                               |
| 23                                                       | 23                                               |
| 24                                                       | 24                                               |
| 25                                                       | 25                                               |
| 26                                                       | 26                                               |
| 27                                                       | 27                                               |
| 28                                                       | 28                                               |
| 29                                                       | 29                                               |
| 30                                                       | 30                                               |

[illegible]

[illegible]



[illegible]

| PRACTICES<br><br>(Please check appropriate column(s) for all practices.)<br><br>No Reply                              | a.<br><br>NEVER USED<br><br>Check if not used with adult students | b.<br><br>USE FRE-QUENTLY<br><br>Check if used in half or more of occasions where applicable during 1957-58 | c.<br><br>USE OCCA-SION-ALLY<br><br>Check if used but in less than half of occasions where applicable during 1957-58 | d.<br><br>DIS-CON-TINUED USING<br><br>Check if used previously but not in 1957-58 | EFFECTIVENESS IF USED                                                                                |                                                                                                              |                                                                      |                                                                                                  |   |
|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---|
|                                                                                                                       |                                                                   |                                                                                                             |                                                                                                                      |                                                                                   | e.<br>EFFEC-TIVE<br>Check if its' use gave desirable results in half or more of occasions where used | f.<br>PARTLY EFFEC-TIVE<br>Check if use gave desirable results but in less than half of occasions where used | g.<br>NOT EFFEC-TIVE<br>Check if its' use gave no desirable re-sults | h.<br>EFFEC-TIVENESS UNCERTAIN<br>Check if not cer-tain whether its' use gave desir-able results |   |
| <b>G. EVALUATING FARM PRACTICES DURING VISITS</b>                                                                     |                                                                   |                                                                                                             |                                                                                                                      |                                                                                   |                                                                                                      |                                                                                                              |                                                                      |                                                                                                  |   |
| 1. Analyze discussion of previous class in relation to adult student's own farm.                                      | 1                                                                 | 7                                                                                                           | 29                                                                                                                   | 16                                                                                | 0                                                                                                    | 36                                                                                                           | 8                                                                    | 0                                                                                                | 1 |
| 2. Ask questions to help adult student evaluate his farm practices.                                                   | 1                                                                 | 2                                                                                                           | 38                                                                                                                   | 12                                                                                | 0                                                                                                    | 37                                                                                                           | 13                                                                   | 0                                                                                                | 0 |
| 3. Assist adult student to analyze new practices as they affect entire farm.                                          | 1                                                                 | 1                                                                                                           | 35                                                                                                                   | 15                                                                                | 1                                                                                                    | 29                                                                                                           | 19                                                                   | 0                                                                                                | 2 |
| 4. Take adult student to observe new practices of other farmers.                                                      | 0                                                                 | 7                                                                                                           | 19                                                                                                                   | 27                                                                                | 0                                                                                                    | 35                                                                                                           | 10                                                                   | 0                                                                                                | 1 |
| 5. Analyze with adult why practice succeeded.                                                                         | 2                                                                 | 6                                                                                                           | 29                                                                                                                   | 15                                                                                | 1                                                                                                    | 34                                                                                                           | 10                                                                   | 0                                                                                                | 0 |
| 6. Analyze with adult why practice failed.                                                                            | 4                                                                 | 4                                                                                                           | 28                                                                                                                   | 17                                                                                | 0                                                                                                    | 33                                                                                                           | 10                                                                   | 1                                                                                                | 1 |
| 7. Keep written record of new practices being initiated by adult students.                                            | 4                                                                 | 15                                                                                                          | 17                                                                                                                   | 16                                                                                | 1                                                                                                    | 20                                                                                                           | 10                                                                   | 0                                                                                                | 3 |
| 8. Keep record of new practices being dis-continued by adult students.                                                | 4                                                                 | 29                                                                                                          | 7                                                                                                                    | 8                                                                                 | 5                                                                                                    | 8                                                                                                            | 5                                                                    | 0                                                                                                | 2 |
| 9. Analyze, with adult student, practices recommended by government agencies.                                         | 2                                                                 | 8                                                                                                           | 32                                                                                                                   | 11                                                                                | 0                                                                                                    | 26                                                                                                           | 16                                                                   | 0                                                                                                | 1 |
| 10. Analyze, with adult student, practices recommended in magazines and farm papers.                                  | 1                                                                 | 4                                                                                                           | 28                                                                                                                   | 20                                                                                | 0                                                                                                    | 26                                                                                                           | 19                                                                   | 0                                                                                                | 3 |
| 11. Analyze, with adult student, a new practice adopted by a neighbor.                                                | 3                                                                 | 7                                                                                                           | 28                                                                                                                   | 15                                                                                | 0                                                                                                    | 31                                                                                                           | 11                                                                   | 1                                                                                                | 0 |
| 12. Use M.S.U. Area Farm Management Report to assist adult student to evaluate his business.                          | 3                                                                 | 34                                                                                                          | 11                                                                                                                   | 4                                                                                 | 1                                                                                                    | 9                                                                                                            | 6                                                                    | 0                                                                                                | 0 |
| 13. Use local production standards to assist adult student to evaluate his business.                                  | 0                                                                 | 8                                                                                                           | 35                                                                                                                   | 10                                                                                | 0                                                                                                    | 34                                                                                                           | 10                                                                   | 1                                                                                                | 0 |
| 14. Periodically analyze and re-state future plans of the business with adult student and wife jointly.               | 0                                                                 | 17                                                                                                          | 12                                                                                                                   | 23                                                                                | 1                                                                                                    | 17                                                                                                           | 16                                                                   | 1                                                                                                | 1 |
| 15. Periodically analyze and re-state future plans of the business with adult student and son(s) jointly.             | 1                                                                 | 14                                                                                                          | 15                                                                                                                   | 23                                                                                | 0                                                                                                    | 22                                                                                                           | 15                                                                   | 0                                                                                                | 1 |
| 16. Periodically analyze and re-state future plans of the business with entire family.                                | 3                                                                 | 22                                                                                                          | 8                                                                                                                    | 20                                                                                | 0                                                                                                    | 16                                                                                                           | 9                                                                    | 0                                                                                                | 3 |
| 17. Others:                                                                                                           |                                                                   |                                                                                                             |                                                                                                                      |                                                                                   |                                                                                                      |                                                                                                              |                                                                      |                                                                                                  |   |
| 18.                                                                                                                   |                                                                   |                                                                                                             |                                                                                                                      |                                                                                   |                                                                                                      |                                                                                                              |                                                                      |                                                                                                  |   |
| <b>H. EVALUATING INSTRUCTIONAL PRACTICES USED BY THE TEACHER</b>                                                      |                                                                   |                                                                                                             |                                                                                                                      |                                                                                   |                                                                                                      |                                                                                                              |                                                                      |                                                                                                  |   |
| 1. Keep record of name, date, and mileage for farm visits to adult students.                                          | 2                                                                 | 1                                                                                                           | 48                                                                                                                   | 2                                                                                 | 0                                                                                                    | 43                                                                                                           | 2                                                                    | 2                                                                                                | 3 |
| 2. Analyze mileage records of visits to adult students to determine how frequently visited.                           | 12                                                                | 26                                                                                                          | 14                                                                                                                   | 0                                                                                 | 27                                                                                                   | 10                                                                                                           | 1                                                                    | 2                                                                                                |   |
| 3. Record requests from adult students to determine interest in being visited.                                        | 4                                                                 | 21                                                                                                          | 17                                                                                                                   | 11                                                                                | 0                                                                                                    | 17                                                                                                           | 10                                                                   | 0                                                                                                | 1 |
| 4. Keep record of adult students who were absent from farm when visited.                                              | 1                                                                 | 25                                                                                                          | 21                                                                                                                   | 5                                                                                 | 1                                                                                                    | 19                                                                                                           | 4                                                                    | 1                                                                                                | 2 |
| 5. Determine number of miles traveled per adult student visited.                                                      | 2                                                                 | 27                                                                                                          | 17                                                                                                                   | 6                                                                                 | 1                                                                                                    | 17                                                                                                           | 4                                                                    | 2                                                                                                | 1 |
| 6. Attempt to analyze adult student's response as instruction is given.                                               | 3                                                                 | 6                                                                                                           | 33                                                                                                                   | 11                                                                                | 0                                                                                                    | 27                                                                                                           | 15                                                                   | 0                                                                                                | 2 |
| 7. Inquire how much benefit materials were that were left at a previous visit.                                        | 3                                                                 | 12                                                                                                          | 16                                                                                                                   | 21                                                                                | 1                                                                                                    | 17                                                                                                           | 16                                                                   | 1                                                                                                | 3 |
| 8. Observe performance of a skill taught on a previous visit.                                                         | 2                                                                 | 6                                                                                                           | 28                                                                                                                   | 16                                                                                | 1                                                                                                    | 31                                                                                                           | 13                                                                   | 0                                                                                                | 0 |
| 9. Observe adult student's application of a skill which was taught during a previous class.                           | 2                                                                 | 2                                                                                                           | 33                                                                                                                   | 16                                                                                | 0                                                                                                    | 38                                                                                                           | 10                                                                   | 1                                                                                                | 0 |
| 10. Analyze enrollments to determine the influence of visits made before courses start.                               | 2                                                                 | 14                                                                                                          | 27                                                                                                                   | 10                                                                                | 0                                                                                                    | 27                                                                                                           | 8                                                                    | 1                                                                                                | 1 |
| 11. Inquire about the action suggested at the previous visit.                                                         | 2                                                                 | 5                                                                                                           | 32                                                                                                                   | 14                                                                                | 0                                                                                                    | 30                                                                                                           | 15                                                                   | 1                                                                                                | 0 |
| 12. Analyze class attendance to determine whether adult students were in attendance who requested certain subjects.   | 1                                                                 | 12                                                                                                          | 31                                                                                                                   | 9                                                                                 | 0                                                                                                    | 27                                                                                                           | 8                                                                    | 2                                                                                                | 3 |
| 13. Analyze class discussions to determine whether adult students taught skills on the farm are more active in class. | 2                                                                 | 11                                                                                                          | 26                                                                                                                   | 14                                                                                | 0                                                                                                    | 27                                                                                                           | 9                                                                    | 0                                                                                                | 4 |
| 14. Take photographs of approved practices to show "before" and "after" situations.                                   | 2                                                                 | 12                                                                                                          | 24                                                                                                                   | 15                                                                                | 0                                                                                                    | 31                                                                                                           | 7                                                                    | 0                                                                                                | 1 |
| 15. Others:                                                                                                           |                                                                   |                                                                                                             |                                                                                                                      |                                                                                   |                                                                                                      |                                                                                                              |                                                                      |                                                                                                  |   |
| 16.                                                                                                                   |                                                                   |                                                                                                             |                                                                                                                      |                                                                                   |                                                                                                      |                                                                                                              |                                                                      |                                                                                                  |   |

(Have you checked all the practices and evaluated the effectiveness of those used? Please do not omit any.)





## INDIVIDUAL ON-FARM INSTRUCTION FOR ADULT FARMERS

Number of Years Experience Teaching Adult-Farmer Classes      Total Adult Visits Made Per Year (Approximately)

|                                                                                        | If you check here, check no more columns | USE OF PRACTICE<br>If you check columns b, c, or d, always check one column for its effectiveness. |                                                                            |                                                                                  |                                             | EFFECTIVENESS IF USED<br>If you have checked columns b, c, or d, check one of these columns according to the effectiveness of the practice on entire adult-farmer program. |                                                                                   |                                            |                                                             |
|----------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------|
|                                                                                        |                                          | a.<br>NEVER USED                                                                                   | b.<br>USE FRE-QUENTLY                                                      | c.<br>USE OCCA-SION-ALLY                                                         | d.<br>DIS-CON-TINUED USING                  | e.<br>EFFEC-TIVE                                                                                                                                                           | f.<br>PARTLY EFFEC-TIVE                                                           | g.<br>NOT EFFEC-TIVE                       | h.<br>EFFEC-TIVENESS UNCERTAIN                              |
| PRACTICES                                                                              | Check if not used with adult students    |                                                                                                    | Check if used in half or more of occasions where applicable during 1957-58 | Check if used but in less than half of occasions where applicable during 1957-58 | Check if used previously but not in 1957-58 | Check if its use gave desirable results in half or more of occasions where used                                                                                            | Check if use gave desirable results but in less than half of occasions where used | Check if its use gave no desirable results | Check if not certain whether its use gave desirable results |
| (Please check appropriate column(s) for all practices.)                                |                                          |                                                                                                    |                                                                            |                                                                                  |                                             |                                                                                                                                                                            |                                                                                   |                                            |                                                             |
| A. ORGANIZING FOR VISITS                                                               |                                          |                                                                                                    |                                                                            | SCORE                                                                            |                                             | PER CENT                                                                                                                                                                   |                                                                                   |                                            |                                                             |
| 1. Explain purposes of farm visits during adult classes.                               |                                          |                                                                                                    |                                                                            | 2.97                                                                             |                                             | 78.9                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 2. Make frequent offers in classes to give on-farm instruction.                        |                                          |                                                                                                    |                                                                            | 3.04                                                                             |                                             | 92.5                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 3. Collect a small file of pertinent materials to be carried in car.                   |                                          |                                                                                                    |                                                                            | 3.19                                                                             |                                             | 74.5                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 4. Collect equipment (soil sampler, test kits, etc.) to be carried in car.             |                                          |                                                                                                    |                                                                            | 3.19                                                                             |                                             | 86.5                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 5. Review recorded information about adult student before visiting.                    |                                          |                                                                                                    |                                                                            | 3.38                                                                             |                                             | 66.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 6. Wear less formal clothing for farm visits.                                          |                                          |                                                                                                    |                                                                            | 3.76                                                                             |                                             | 98.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 7. Try to overcome the disappointments of previous unsuccessful visits the same day.   |                                          |                                                                                                    |                                                                            | 2.65                                                                             |                                             | 51.1                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 8. Try to overcome the disappointments of previous unsuccessful visit with same adult. |                                          |                                                                                                    |                                                                            | 2.70                                                                             |                                             | 68.8                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 9. Limit most visits to one major purpose.                                             |                                          |                                                                                                    |                                                                            | 3.46                                                                             |                                             | 89.6                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 10. Others:                                                                            |                                          |                                                                                                    |                                                                            |                                                                                  |                                             |                                                                                                                                                                            |                                                                                   |                                            |                                                             |
| 11.                                                                                    |                                          |                                                                                                    | AVERAGE                                                                    | 3.15                                                                             |                                             | 77.3                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| B. SCHEDULING FARM VISITS                                                              |                                          |                                                                                                    |                                                                            |                                                                                  |                                             |                                                                                                                                                                            |                                                                                   |                                            |                                                             |
| 1. Arrange visits during adult class.                                                  |                                          |                                                                                                    |                                                                            | 2.88                                                                             |                                             | 66.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 2. Arrange visits during class meetings through approved practices check list.         |                                          |                                                                                                    |                                                                            | 2.45                                                                             |                                             | 39.6                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 3. Encourage adult students to request visits by phone, mail, etc..                    |                                          |                                                                                                    |                                                                            | 2.95                                                                             |                                             | 79.2                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 4. Provide on-farm instruction to former adult students, only upon request.            |                                          |                                                                                                    |                                                                            | 2.77                                                                             |                                             | 46.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 5. Visit, when requested, those farmers who have not previously attended classes.      |                                          |                                                                                                    |                                                                            | 3.30                                                                             |                                             | 82.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 6. Maintain a list of potential farm visits.                                           |                                          |                                                                                                    |                                                                            | 3.62                                                                             |                                             | 69.4                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 7. Usually visit adult students once a year.                                           |                                          |                                                                                                    |                                                                            | 3.52                                                                             |                                             | 54.3                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 8. Usually visit adult students quarterly.                                             |                                          |                                                                                                    |                                                                            | 3.28                                                                             |                                             | 40.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 9. Usually visit adult students once a month.                                          |                                          |                                                                                                    |                                                                            | 3.14                                                                             |                                             | 15.9                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 10. Visit adult students as frequently as their needs require.                         |                                          |                                                                                                    |                                                                            | 3.51                                                                             |                                             | 92.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 11. Visit adult student about as frequently as he attends classes.                     |                                          |                                                                                                    |                                                                            | 2.70                                                                             |                                             | 29.2                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 12. Make at least one visit during summer.                                             |                                          |                                                                                                    |                                                                            | 3.85                                                                             |                                             | 82.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 13. Make farm visits between class meetings.                                           |                                          |                                                                                                    |                                                                            | 3.31                                                                             |                                             | 85.1                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 14. Visit at a crucial time during adoption of a farm practice.                        |                                          |                                                                                                    |                                                                            | 3.73                                                                             |                                             | 98.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 15. Avoid visiting during days of important farm work.                                 |                                          |                                                                                                    |                                                                            | 3.57                                                                             |                                             | 81.6                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 16. Have one or more periods in school schedule specified for adult student visits.    |                                          |                                                                                                    |                                                                            | 3.52                                                                             |                                             | 54.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 17. Schedule part of 1 or 2 school days per week to visit adult students.              |                                          |                                                                                                    |                                                                            | 2.92                                                                             |                                             | 28.3                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 18. Schedule part of 3 or more school days per week to visit adult students.           |                                          |                                                                                                    |                                                                            | 3.10                                                                             |                                             | 23.9                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 19. Schedule part of every school day to visit adult students.                         |                                          |                                                                                                    |                                                                            | 3.50                                                                             |                                             | 16.3                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 20. Schedule visit to adult student on same trip as a high school student.             |                                          |                                                                                                    |                                                                            | 3.27                                                                             |                                             | 89.6                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 21. Schedule visit early in the morning before school starts.                          |                                          |                                                                                                    |                                                                            | 2.89                                                                             |                                             | 38.8                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 22. Schedule visit after school hours.                                                 |                                          |                                                                                                    |                                                                            | 3.45                                                                             |                                             | 93.8                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 23. Plan most visits shorter than an hour long.                                        |                                          |                                                                                                    |                                                                            | 3.60                                                                             |                                             | 78.7                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 24. Notify (phone, card) adult student before visit is made.                           |                                          |                                                                                                    |                                                                            | 2.38                                                                             |                                             | 55.1                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 25. Arrange for next visit before leaving farm.                                        |                                          |                                                                                                    |                                                                            | 2.08                                                                             |                                             | 50.0                                                                                                                                                                       |                                                                                   |                                            |                                                             |
| 26. Others:                                                                            |                                          |                                                                                                    |                                                                            |                                                                                  |                                             |                                                                                                                                                                            |                                                                                   |                                            |                                                             |
| 27.                                                                                    |                                          |                                                                                                    | AVERAGE                                                                    | 3.17                                                                             |                                             | 59.6                                                                                                                                                                       |                                                                                   |                                            |                                                             |





|                                                                                                       | If you check here, check no more columns | USE OF PRACTICE<br>If you check columns b, c, or d, always check one column for its' effectiveness. |                                                                                  |                                             |                                                                                  | EFFECTIVENESS IF USED<br>If you have checked columns b, c, or d, check one of these columns according to the effectiveness of the practice on entire adult-farmer program. |                                             |                                                              |  |
|-------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------|--|
|                                                                                                       | a.                                       | b.                                                                                                  | c.                                                                               | d.                                          | e.                                                                               | f.                                                                                                                                                                         | g.                                          | h.                                                           |  |
|                                                                                                       | NEVER USED                               | USE FREQUENTLY                                                                                      | USE OCCASIONALLY                                                                 | DISCONTINUED USING                          | EFFECTIVE                                                                        | PARTLY EFFECTIVE                                                                                                                                                           | NOT EFFECTIVE                               | EFFECTIVENESS UNCERTAIN                                      |  |
| PRACTICES                                                                                             | Check if not used with adult students    | Check if used in half or more of occasions where applicable during 1957-58                          | Check if used but in less than half of occasions where applicable during 1957-58 | Check if used previously but not in 1957-58 | Check if its' use gave desirable results in half or more of occasions where used | Check if use gave desirable results but in less than half of occasions where used                                                                                          | Check if its' use gave no desirable results | Check if not certain whether its' use gave desirable results |  |
| (Please check appropriate column(s) for all practices.)                                               |                                          |                                                                                                     |                                                                                  |                                             |                                                                                  |                                                                                                                                                                            |                                             |                                                              |  |
| E. <u>INSTRUCTING DURING FARM VISITS</u>                                                              |                                          |                                                                                                     | SCORES                                                                           |                                             | PER CENT                                                                         |                                                                                                                                                                            |                                             |                                                              |  |
| 1. Adjust instruction to the socio-economic level of adult student.                                   |                                          |                                                                                                     | 3.48                                                                             |                                             | 96.1                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 2. Use discussion method of teaching during visits.                                                   |                                          |                                                                                                     | 3.81                                                                             |                                             | 92.3                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 3. Use demonstrations to teach skills on visits.                                                      |                                          |                                                                                                     | 3.17                                                                             |                                             | 92.3                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 4. Use leading questions to stimulate discussion.                                                     |                                          |                                                                                                     | 3.73                                                                             |                                             | 98.1                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 5. Use the method of telling the farmer the answers to his problems.                                  |                                          |                                                                                                     | 2.06                                                                             |                                             | 41.7                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 6. Use slide films, colored slides, snapshots for instruction on farm.                                |                                          |                                                                                                     | 2.44                                                                             |                                             | 32.1                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 7. Use charts and graphs for instruction on visits.                                                   |                                          |                                                                                                     | 2.17                                                                             |                                             | 37.7                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 8. Use specimen or models during visits.                                                              |                                          |                                                                                                     | 2.88                                                                             |                                             | 49.1                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 9. Use bulletins and other printed material on visits.                                                |                                          |                                                                                                     | 2.49                                                                             |                                             | 90.4                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 10. Observe adult student's application of a skill after it was taught.                               |                                          |                                                                                                     | 3.08                                                                             |                                             | 92.4                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 11. Have adult student make own calculations during instruction on visits.                            |                                          |                                                                                                     | 2.98                                                                             |                                             | 84.9                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 12. Make calculations for adult student yourself during visits.                                       |                                          |                                                                                                     | 1.56                                                                             |                                             | 72.5                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 13. Involve children or hired man in certain visits.                                                  |                                          |                                                                                                     | 2.61                                                                             |                                             | 74.5                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 14. Refer adult student with highly technical problems to appropriate agencies or people.             |                                          |                                                                                                     | 3.45                                                                             |                                             | 94.2                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 15. Contact agencies or people about technical problems and then relay information to adult students. |                                          |                                                                                                     | 2.38                                                                             |                                             | 94.2                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 16. Promise to provide further information on a question at next adult class.                         |                                          |                                                                                                     | 3.22                                                                             |                                             | 92.4                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 17. Others:                                                                                           |                                          |                                                                                                     |                                                                                  |                                             |                                                                                  |                                                                                                                                                                            |                                             |                                                              |  |
| 18.                                                                                                   |                                          | AVERAGE                                                                                             | 2.90                                                                             |                                             | 77.2                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| F. <u>PLANNING ACTION DURING VISITS</u>                                                               |                                          |                                                                                                     |                                                                                  |                                             |                                                                                  |                                                                                                                                                                            |                                             |                                                              |  |
| 1. Ask questions to help adult student clarify his goals.                                             |                                          |                                                                                                     | 2.98                                                                             |                                             | 90.2                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 2. Assist adult student to set goals of production or management.                                     |                                          |                                                                                                     | 3.19                                                                             |                                             | 92.3                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 3. In decision-making questions, suggest two or three choices of action.                              |                                          |                                                                                                     | 3.30                                                                             |                                             | 94.2                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 4. Provide several copies of farm map for adult student's use in planning.                            |                                          |                                                                                                     | 2.39                                                                             |                                             | 35.7                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 5. Encourage adoption of new practices on small scale at beginning.                                   |                                          |                                                                                                     | 3.45                                                                             |                                             | 96.2                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 6. Use economic urge to motivate adult student to try new practice.                                   |                                          |                                                                                                     | 3.45                                                                             |                                             | 96.2                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 7. Use urge for security to motivate adult student to try new practice.                               |                                          |                                                                                                     | 2.86                                                                             |                                             | 78.0                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 8. Use social prestige factor to motivate adult student to try new practice.                          |                                          |                                                                                                     | 2.38                                                                             |                                             | 55.8                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 9. Assist adult student to conduct trial plots on farm.                                               |                                          |                                                                                                     | 3.18                                                                             |                                             | 83.0                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 10. Plan future action with adult student and wife jointly.                                           |                                          |                                                                                                     | 2.81                                                                             |                                             | 86.8                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 11. Plan future action with adult student and son(s) jointly.                                         |                                          |                                                                                                     | 3.23                                                                             |                                             | 84.6                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 12. Plan future action with entire family.                                                            |                                          |                                                                                                     | 2.57                                                                             |                                             | 59.6                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 13. Arrive at definite conclusions on key ideas discussed.                                            |                                          |                                                                                                     | 2.88                                                                             |                                             | 85.7                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 14. Leave written report of conclusions reached and action planned.                                   |                                          |                                                                                                     | 2.58                                                                             |                                             | 26.5                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 15. Encourage adult student to take own notes during visits.                                          |                                          |                                                                                                     | 2.42                                                                             |                                             | 22.6                                                                             |                                                                                                                                                                            |                                             |                                                              |  |
| 16. Others:                                                                                           |                                          |                                                                                                     |                                                                                  |                                             |                                                                                  |                                                                                                                                                                            |                                             |                                                              |  |
| 17.                                                                                                   |                                          | AVERAGE                                                                                             | 2.91                                                                             |                                             | 72.5                                                                             |                                                                                                                                                                            |                                             |                                                              |  |

|                                                                                                                       | If you check here, check no more columns | USE OF PRACTICE<br>If you check columns b, c, or d, always check one column for its' effectiveness. |                                                                                  |                                             | EFFECTIVENESS IF USED<br>If you have checked columns b, c, or d, check one of these columns according to the effectiveness of the practice on entire adult-farmer program. |                                                                                   |                                             |                                                              |
|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------|
|                                                                                                                       | a.<br>NEVER USED                         | b.<br>USE FRE-<br>QUENTLY                                                                           | c.<br>USE OCCA-<br>SION-<br>ALLY                                                 | d.<br>DIS-<br>CON-<br>TINUED<br>USING       | e.<br>EFFECTIVE                                                                                                                                                            | f.<br>PARTLY EFFECTIVE                                                            | g.<br>NOT EFFECTIVE                         | h.<br>EFFECTIVENESS UNCERTAIN                                |
| PRACTICES                                                                                                             | Check if not used with adult students    | Check if used in half or more of occasions where applicable during 1957-58                          | Check if used but in less than half of occasions where applicable during 1957-58 | Check if used previously but not in 1957-58 | Check if its' use gave desirable results in half or more of occasions where used                                                                                           | Check if use gave desirable results but in less than half of occasions where used | Check if its' use gave no desirable results | Check if not certain whether its' use gave desirable results |
| (Please check appropriate column(s) for all practices.)                                                               |                                          |                                                                                                     |                                                                                  |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                              |
| G. EVALUATING FARM PRACTICES DURING VISITS                                                                            |                                          |                                                                                                     | SCORE                                                                            |                                             | PER CENT                                                                                                                                                                   |                                                                                   |                                             |                                                              |
| 1. Analyze discussion of previous class in relation to adult student's own farm.                                      |                                          |                                                                                                     | 3.30                                                                             |                                             | 86.5                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 2. Ask questions to help adult student evaluate his farm practices.                                                   |                                          |                                                                                                     | 3.24                                                                             |                                             | 96.2                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 3. Assist adult student to analyze new practices as they affect entire farm.                                          |                                          |                                                                                                     | 2.94                                                                             |                                             | 96.2                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 4. Take adult student to observe new practices of other farmers.                                                      |                                          |                                                                                                     | 2.98                                                                             |                                             | 86.8                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 5. Analyze with adult why practice succeeded.                                                                         |                                          |                                                                                                     | 3.20                                                                             |                                             | 86.3                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 6. Analyze with adult why practice failed.                                                                            |                                          |                                                                                                     | 3.07                                                                             |                                             | 91.8                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 7. Keep written record of new practices being initiated by adult students.                                            |                                          |                                                                                                     | 2.83                                                                             |                                             | 67.3                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 8. Keep record of new practices being discontinued by adult students.                                                 |                                          |                                                                                                     | 2.77                                                                             |                                             | 30.6                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 9. Analyze, with adult student, practices recommended by government agencies.                                         |                                          |                                                                                                     | 2.98                                                                             |                                             | 84.3                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 10. Analyze, with adult student, practices recommended in magazines and farm papers.                                  |                                          |                                                                                                     | 2.76                                                                             |                                             | 92.3                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 11. Analyze, with adult student, a new practice adopted by a neighbor.                                                |                                          |                                                                                                     | 3.07                                                                             |                                             | 86.0                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 12. Use M.S.U. Area Farm Management Report to assist adult student to evaluate his business.                          |                                          |                                                                                                     | 2.93                                                                             |                                             | 30.0                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 13. Use local production standards to assist adult student to evaluate his business.                                  |                                          |                                                                                                     | 3.26                                                                             |                                             | 81.1                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 14. Periodically analyze and re-state future plans of the business with adult student and wife jointly.               |                                          |                                                                                                     | 2.32                                                                             |                                             | 66.0                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 15. Periodically analyze and re-state future plans of the business with adult student and son(s) jointly.             |                                          |                                                                                                     | 2.59                                                                             |                                             | 73.1                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 16. Periodically analyze and re-state future plans of the business with entire family.                                |                                          |                                                                                                     | 2.56                                                                             |                                             | 56.0                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 17. Others:                                                                                                           |                                          |                                                                                                     |                                                                                  |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                              |
| 18.                                                                                                                   |                                          | AVERAGE                                                                                             | 2.93                                                                             |                                             | 75.7                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| H. EVALUATING INSTRUCTIONAL PRACTICES USED BY THE TEACHER                                                             |                                          |                                                                                                     |                                                                                  |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                              |
| 1. Keep record of name, date, and mileage for farm visits to adult students.                                          |                                          |                                                                                                     | 3.72                                                                             |                                             | 98.0                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 2. Analyze mileage records of visits to adult students to determine how frequently visited.                           |                                          |                                                                                                     | 3.05                                                                             |                                             | 76.9                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 3. Record requests from adult students to determine interest in being visited.                                        |                                          |                                                                                                     | 2.85                                                                             |                                             | 57.2                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 4. Keep record of adult students who were absent from farm when visited.                                              |                                          |                                                                                                     | 3.38                                                                             |                                             | 50.0                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 5. Determine number of miles traveled per adult student visited.                                                      |                                          |                                                                                                     | 3.09                                                                             |                                             | 45.1                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 6. Attempt to analyze adult student's response as instruction is given.                                               |                                          |                                                                                                     | 3.02                                                                             |                                             | 88.0                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 7. Inquire how much benefit materials were that were left at a previous visit.                                        |                                          |                                                                                                     | 2.44                                                                             |                                             | 74.0                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 8. Observe performance of a skill taught on a previous visit.                                                         |                                          |                                                                                                     | 3.05                                                                             |                                             | 86.3                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 9. Observe adult student's application of a skill which was taught during a previous class.                           |                                          |                                                                                                     | 3.20                                                                             |                                             | 96.1                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 10. Analyze enrollments to determine the influence of visits made before courses start.                               |                                          |                                                                                                     | 3.22                                                                             |                                             | 72.5                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 11. Inquire about the action suggested at the previous visit.                                                         |                                          |                                                                                                     | 2.98                                                                             |                                             | 90.2                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 12. Analyze class attendance to determine whether adult students were in attendance who requested certain subjects.   |                                          |                                                                                                     | 3.16                                                                             |                                             | 76.9                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 13. Analyze class discussions to determine whether adult students taught skills on the farm are more active in class. |                                          |                                                                                                     | 3.19                                                                             |                                             | 78.4                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 14. Take photographs of approved practices to show "before" and "after" situations.                                   |                                          |                                                                                                     | 3.26                                                                             |                                             | 76.5                                                                                                                                                                       |                                                                                   |                                             |                                                              |
| 15. Others:                                                                                                           |                                          |                                                                                                     |                                                                                  |                                             |                                                                                                                                                                            |                                                                                   |                                             |                                                              |
| 16.                                                                                                                   |                                          | AVERAGE                                                                                             | 3.12                                                                             |                                             | 76.2                                                                                                                                                                       |                                                                                   |                                             |                                                              |

(Have you checked all the practices and evaluated the effectiveness of those used? Please do not omit any.)

APPENDIX K

198-201

**APPENDIX K**

**198-201**

MICHIGAN STATE UNIVERSITY LIBRARIES



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