PRACTICES ADVOCATED BY SELECTED NATIONAL AGENCIES AND ORGANIZATIONS FOR IMPLEMENTING LOCAL PROGRAMS OF VOCATIONAL AGRICULTURE, 1836-1954

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by

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AN ABSTRACT

Submitted to the School for Advanced Graduate Studies of
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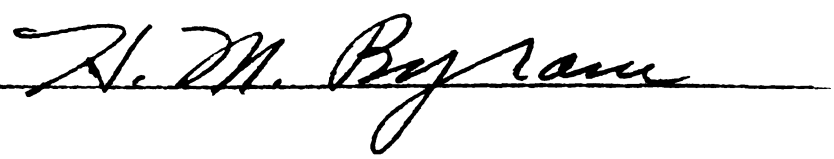
Approved 

OTIS DONALD MEADERS

ABSTRACT

Purpose. (a) Determine practices advocated by selected national organizations and agencies for development of local programs of vocational education in agriculture in the United States during the period covering approximately fifty years preceding 1955; and (b) study relationships between present-day concepts, a jury's reactions to the concepts, and practices advocated from 1941-1954 for development of local programs.

Method. Publications were analyzed and compared from seven organizations and agencies whose leadership functions were primarily national in scope. Selected leaders in educational administration and agricultural education, as a jury, were asked to give their reactions to each of forty-nine present-day concepts. Present-day concepts, jury reactions, and practices advocated were compared.

Findings and interpretations. Official publications by the selected groups dealing with agricultural education in public schools were listed chronologically by source in the appendices. The bibliography included 185 items.

Programs of vocational education in agriculture, according to the practices advocated, have always been intended primarily for those in or desiring to engage in farming.

Except prior to 1910, vocational agriculture has been advocated as an integral part of public high-school

programs. Recommended content for local programs expanded from classroom instruction and home-project work during 1911-1916 to classroom instruction, broadened farming programs, farm mechanics, a chapter of Future Farmers of America, and an advisory council during 1941-1954.

Recommendations shifted from emphasizing home-projects as a method of teaching to methods of developing farming programs.

Methods advocated for determining the instructional program shifted from reliance on experts in technical agriculture to involvement of students, parents, and advisory groups. Recommendations changed from the logical to the psychological basis for organizing the subject matter.

Farm mechanics instruction was not generally advocated as an integral part of all programs until 1941-1954. Activities of agricultural clubs or Future Farmers of America Chapters, when advocated, were always recommended as a method of teaching.

Relatively little leadership was given through official publications to practices for measuring and evaluating results in agricultural education until 1941-1954.

Agricultural education, especially vocational education in agriculture, was of concern to more and different organizations, groups, and agencies in the earlier years than in later years.

The jury tended to "agree" with all concepts except those dealing with (a) related agricultural occupations, (b) who should be enrolled, (c) time for offering most of the on-farm instruction, and (d) kind and place of supervised experiences.

Practices advocated during 1941-1954 tended to "agree" with all concepts except those dealing with (a) time for offering most of the on-farm instruction, and (b) including instruction to assist students enrolled in making a vocational choice.

If vocational agriculture should be an integral part of public high schools, there should be active involvement of more national groups rather than fewer for leadership of the program.

If vocational agriculture is to serve only those in or preparing to enter farming, consideration should be given by national groups to development of programs to serve needs of those preparing to enter agricultural occupations closely related to farming.

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TABLE OF CONTENTS

APPENDIX PAGE

LIST OF TABLES

CHAPTER I

INTRODUCTION

The development of programs of vocational education in agriculture is commonly associated with several national organizations and agencies, and individuals, as well as the Smith-Hughes act.

A great revolution has taken place in rural life, and in all segments of the American economy, during the years since 1917 when the Smith-Hughes act was passed. Many questions, such as the following, might be asked regarding the changes in recommendations for programs of vocational agriculture during those same years:

1. How do the recommendations in 1954 differ from those given in earlier years?
2. What national organizations and agencies have been active in making recommendations for vocational agriculture?

The Problem

Statement of purposes. The purposes of this study were: (a) to determine some of the practices which were advocated by selected national organizations and agencies during the period covering approximately fifty years preced-

ing 1955 for the development of local programs of vocational education in agriculture; and (b) to study the relationships between present-day concepts, a jury's reactions to the concepts, and the practices advocated from 1941-1954 for development of local programs of vocational agriculture. As an outgrowth of the study, a comprehensive list of publications, addresses, and articles concerning agricultural education in public secondary schools was to be compiled and presented as a part of the study.

Need of the study. Relatively few studies had been made of the educational practices advocated for vocational education in agriculture by the national leadership groups. Many of the studies had emphasized physical aspects of the program, such as the dollars spent, numbers of students enrolled, and number of departments. Very little attention had been given to the trends in practices advocated by national groups for developing and conducting local programs.

The information concerning practices advocated by the selected national groups had never been accumulated and analyzed. The programs of agricultural education in the public schools have been growing and developing for more than fifty years and the practices advocated during that period need to be studied. Some of the material prepared and distributed by these national groups has already been lost or destroyed. Material currently available needs to be studied before it too is destroyed or lost.

Previous reviews of educational practices advocated were very general and did not deal with details. Such generalizations usually left much to conjecture with the resultant myriad of possible interpretations. In this study an attempt was made to carefully review the details of educational practices advocated for implementing and developing local programs of vocational agriculture.

The intensive review of a large amount of literature in the field of agricultural education has contributed to the growth and understanding of the writer. Such a first-hand knowledge of sources of information on agricultural education, and especially on vocational agriculture, should be of value in developing plans and programs for agricultural education.

Procedure

The procedures used for this study involved: (a) the selection and delimitation of the problem; (b) the accumulation, classification, and criticism of source materials; (c) the identification of the practices advocated; (d) the synthesis and presentation of the facts in a logically organized form; (e) the formulation of tentative generalizations to show the trends of concepts of practices; and (f) the determination of relationships between present-day concepts, jury reactions, and practices advocated during 1941-1954.

Sources of information. The organizations and agencies selected for this study were groups whose leadership functions were primarily national in scope. The seven groups selected are presented in Table I. While publications from only these were used in the study, many articles and publications from other groups and individuals were also reviewed (see Appendices).

TABLE I

CHRONOLOGICAL LIST OF NATIONAL ORGANIZATIONS AND AGENCIES SELECTED WITH DATES OF THEIR ORGANIZATION

Organization or agency	Year Organized
U.S. Patent Bureau	1836
National Education Association (including National Teachers' Association)	1857
U.S. Department of Agriculture	1862
U.S. Office of Education (including Bureau of Education, and Federal Board for Vocational Education)	1867
Association of Land-Grant Colleges and Universities	1888
American Vocational Association (including National Society for the Promotion of Industrial Education, and National Society for Vocational Education)	1906
American Association for the Advancement of Agricultural Teaching (no longer in existence)	1911

Practices advocated. The educational practices advocated by national groups and organizations were selected if they affected primarily the program of agricultural edu-

cation in the public high schools. They were selected because they affected the development and implementation of local programs of agricultural education for students enrolled in high school.

Opinionaire. Forty-nine concepts, which were believed to be held by many present-day leaders in agricultural education, were selected and prepared as an opinionaire. Most of the concepts were adapted from a thesis completed in 1954 by W. Howard Martin (1).[1] Martin reviewed the writings of teacher educators in agriculture, covering the years 1945 to 1953, and concluded that certain concepts were held more than other concepts.

The concepts in the opinionaire dealing with related agricultural occupations were taken by the author from writings by workers in agricultural education in 1954.

The concepts were divided into three main areas (General, Organized Instruction, Farming Programs) with each area further divided into two parts, "method" and "content." The concepts that seemed to refer to "what" to include in the program and "objectives" were classified under content; those concepts that seemed to refer to "how" to

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[1] Numbers in parentheses refer to specific sources of information listed in the numbered bibliography. For example, (3:1-2,5) refers to pages 1-2 and 5 of the source listed as number 3 in the bibliography; (3; 4) refers to sources listed as numbers 3 and 4 in the bibliography; and (3; 4:2) refers to source 3 and to page 2 of source 4.

implement, improve, or conduct a local program were classified under method. If the concept seemed to refer more to method than content it was classified under method; if it referred mainly to content, it was classified under content.

Instructions to the jury included four statements as guides for interpretation of the concepts:

1. The concepts are for vocational education in agriculture as it applies to students enrolled in high-school courses.

2. The concepts are intended to be broad enough to include all phases of the vocational agricultural program for high school students: classwork, shopwork, supervised farming programs, and Future Farmers of America chapters.

3. "Should" is underscored in each concept to emphasize that the concept is believed to be more commonly accepted than some other concept.

4. Additional concepts and/or suggested changes are welcomed.

The jury. A jury of thirty-four men was selected from leaders in the fields of educational administration and agricultural education. Some attempt was made in selecting the jury to have representation from all general areas of the United States. Seventeen men were selected from each field by using the following criteria:

1. Recognized as having exerted leadership of national importance through publications, professional organizations, and/or positions of national leadership.

2. Affiliated with a college, university, national organization and/or national agency.

The jury members were asked to record their reactions to each concept by checking "agree," "disagree," or "undecided." A copy of the opinionaire, list of the jury members, and instructions and letters sent to the jury members are included in Appendix A.

The opinions expressed by the jury members were not considered as representative of the viewpoints of all national leaders in agricultural education and educational administration. A comparison was made between the reactions of the jury members, the practices advocated during 1941-1954, and the present-day concepts listed in the opinionaire.

Scope

Vocational education in agriculture. Major emphasis was given to those educational practices advocated to implement an instructional program of vocational education in agriculture in the public secondary schools. Although a local program of vocational agriculture often includes adult farmers, young farmers, and high school students, the emphasis in this study was placed upon the practices advocated primarily for the program for high school students.

National leadership. Emphasis was placed upon practices advocated by national leadership groups for local programs of vocational agriculture. Although leadership undoubtedly was exerted in many ways, the leadership con-

sidered for this study was confined to that which was exerted through published materials intended for national distribution. The comments of individuals, who wrote or spoke as official representatives of the national groups and agencies, were considered. Books and other published materials written by individuals, but not as spokesmen for a national group or agency, were not reviewed.

Limitations

The limitations inherent in any historical study were also a part of this one. It was relatively easy to locate most of the major publications of each national agency and organization, although some of the materials published before 1900, and some of the more recent proceedings and addresses of certain organizations, were unavailable. The more difficult task was the determination of exactly what was advocated by the groups and then the synthesis of the practices advocated by the individual groups into a concise picture.

Some other specific limitations were:

1. Many of the educational practices advocated may never have been put in writing.
2. Much that was written may have been representative of individual rather than group ideas.
3. Much leadership may have come through correspondence, personal conferences, and other means whereby no records are available.

4. The jury reactions to the present-day concepts probably more nearly reflected what was thought in 1955 and what was written in 1954 rather than what was written between 1941-1954.

Over a period of more than fifty years the kind of leadership given by any organization or agency is quite likely to have undergone considerable change. Some of those changes may be due to changes in personnel, while other changes may be due to legislative action, results of research, and other factors. Also, much leadership is exerted in ways other than through publications.

Because of the possible changes in the leadership role of the various organizations and agencies studied and in the many different ways in which leadership is exerted, conclusions should not be drawn from this study as to the adequacy or suitability of the total leadership from any of the groups studied. For example, the lack of information for many years in bulletins and monographs from the U.S. Office of Education concerning the Future Farmers of America as a part of the local program of vocational agriculture does not necessarily mean that no leadership was given by the U.S. Office of Education to that phase of the program.

The limitation of presenting ideas without bias should not be overlooked. Readers often interpret the same material differently. Practices were interpreted in the light of the author's understanding and for that reason an

attempt was made to use the language of the literature for each period rather than to interpret everything into terms commonly used in 1955.

Definitions of Terms

Vocational education in agriculture. The program of vocational education in the public high schools designed to meet the needs of those engaged in or preparing to enter upon the work of the farm.

Vocational agriculture. Used synonymously with vocational education in agriculture.

Agricultural education. Educational programs in agriculture include agricultural extension, college agriculture, general agriculture, vocational agriculture, and others. In this study agricultural education refers to both vocational and non-vocational programs conducted through the public high schools. The term is used with definitions the same as commonly applied during the various periods.

Present-day concept. "Present-day" refers to the concepts believed to be held by teacher educators in agriculture during the period 1945-1953. A concept (thought or opinion) is considered to be more general than a practice. Several practices could be implied by a single concept.

Practice. In this report practice is considered as the method of doing something and, also, that which is done.

The practices advocated are examined to identify and define their different elements (method and content). "Method" is used to refer to the process of doing something; "content" is used to refer to that which is done.

Practice is used as "educational practice" to distinguish it from "farming practice."

"Method" and "content," linked in actual operation, can be separated in theory. An example of such a distinction is as follows: "Giving on-farm supervision" is a "method"; "the supervision given" is composed of "content."

CHAPTER II

PRACTICES ADVOCATED

Public education in the United States is quite generally recognized as being primarily a responsibility of the states and local communities, although some leadership does come from national sources. Some of the national leadership comes through agencies created by legislative action, while other leadership comes through professional and lay organizations which have either direct or indirect concerns for the public education programs.

Two general questions were raised regarding the specific practices advocated by the selected groups for implementing, conducting, and improving local programs of agricultural education:

1. What was the "content" of the programs advocated?
2. What were the "methods" advocated for implementing, conducting, and improving those programs?

The practices advocated by the national groups selected for this study are presented through six general periods:[2] Before 1900, 1900-1910, 1911-1916, 1917-1928, 1929-1940, and 1941-1954.

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[2]The periods designated in this study were not strictly defined. The years assigned to each period were for the convenience of readers and were merely approximate stages of development of vocational education in agriculture.

Before 1900

Organized efforts for the promotion of agricultural education had their beginnings in the United States in the agricultural societies which were formed near the end of the eighteenth century for the purpose of disseminating agricultural information and making improvements in agriculture. It was nearly one-hundred years later before significant efforts were made by national organizations and agencies to establish agricultural education in public high schools, although the agricultural colleges were authorized by the Morrill Act in 1862 and the agricultural experiment stations by the Hatch Act in 1887.

Need for agricultural education recognized. Some of the early reports of the Commissioner of Patents revealed an awareness of needs for education in agriculture. Need for improvement in agriculture was expressed very frequently in the report for 1849 (10:6-9). Several appeals were made for federal and state legislation to implement programs of agricultural experimentation, and distribution of information derived from those experiments (10; 15). Browne advocated that agricultural education be promoted through courses in the common schools (4) and others advocated the establishment of agricultural schools and experimental farms in each state (3; 5).

Schools of agriculture at agricultural colleges.

Some specific recommendations for secondary education in agriculture were made for programs in schools associated with the agricultural colleges. W.M. Hays urged the delegates at the sixth annual convention of the Association of American Agricultural Colleges and Experiment Stations to consider seriously the merits of the dairy school of Wisconsin and the three-year school-of-agriculture course in Minnesota (7:133). He stated that one-half of the students' time was occupied with common and high school studies, and the other half with instruction centered around agriculture, horticulture, veterinary medicine, dairying, livestock, and carpentry (7:137). Such a program was six months in length for three winters, and the instruction was provided at the experiment-station farm. Hays advocated similar programs for other states.

Other plans for short courses in agriculture were reported (2:610-612; 9:449-450), but they too were advocated as programs of the agricultural colleges rather than for the public secondary schools.

The Minnesota school of agriculture was often cited during the years just preceding 1900 when discussions were held on the teaching of agriculture in public high schools. The school-of-agriculture was in reality an agricultural high-school operated by the University of Minnesota. Some

of the general requirements at the school, as reported by Hays (8), were summarized as follows:

1. High school instruction for boys and girls planing to continue in the farm life.
2. Students to receive the equivalent of two years high school work.
3. Instruction in agriculture to include soils, road building and repairing, fence building, farm planning, forage crops, roots, weeds, dairy manufacturing, livestock breeds, breeding, and feeds.
4. Instruction by lectures, models, observations, charts, and some practice.
5. Students required in some of the classes to do much reading in the textbooks and write papers on designated subjects.
6. Study of forage crops included detailed discussion of each crop from seedbed preparation through harvesting.

Hays seemed to advocate the high-school course as a means of educating the farmers' sons for farm work. However, no reference was made to include instruction in the regular public secondary school for helping boys and girls learn more about agriculture, or to develop agricultural skills.

Agricultural education in public secondary schools. Other reports (6) were made of agricultural education at the secondary level, but few specific recommendations were made for the teaching of agriculture either as a science or an art in the public secondary schools. Rather significant action regarding agricultural education in the public secondary schools was taken by the convention of delegates

from agricultural colleges and experiment stations in 1885. Their action stands out as some of the first concerted attention to agricultural education in secondary schools by any of the national groups included in this study. Some of the resolutions which were received and approved for publication, although not officially adopted at the convention, were as follows:

> Resolved, That industrial education should begin in our common schools.
>
> Resolved, That such a beginning is eminently practicable if we limit its aims to the formation and development of a sentiment and taste which shall lead pupils into the technical colleges or into industrial pursuits.
>
> Resolved, That this is to be accomplished, not by manual training, since the appliances for such training are not accessible in general to our common schools, but by the following means:
>
> (1) By object teaching, with constant reference to illustrations drawn from the industrial arts.
> (2) By reforming our school literature so that useful citizenship in the pursuit of productive occupations rather than political distinction shall be presented as a worthy object of the ambition of every American boy.
> (3) By so changing the character of our school commencements and exhibitions that the honors of these occasions shall be attainable by students whose talents fit them for honest practical achievement rather than for mere recitation and sham oratorical display.
> (4) By bringing in every possible way our common schools into sympathy with our industrial occupations, thus making them feeders for our technical colleges and securing their aid in solving the old problems of educated helplessness and overcrowded professions. (12:141)

Seemingly, one of the purposes of advocating a study of agriculture in the common schools was to develop a more favorable sentiment toward agricultural colleges and industrial education. The convention of delegates further ex-

pressed faith in the use of textbooks ". . . to teach the ABC's of agriculture . . ." (12:142) Some of the content that was to be taught to the students is as follows:

> . . . the elementary principles of plant and animal life. . . thus you would put him on the direct road to become an intelligent farmer and to bring him into intelligent relationship to agriculture in all its varied forms. (12:143)

One of the first specific discussions on agriculture in the public school reported through the official publications was by A.C. True in 1897. He pointed out the need for instruction in agriculture in the high schools because ". . . large numbers of farmers' boys and girls go to these schools, commonly located near their homes, who are unable to attend the longer and more expensive college courses." (14:288) He also presented some rather specific recommendations for the development of programs of agricultural education in the public secondary schools in or near rural areas: (a) Hire a natural science teacher who has had training in the science and practice of agriculture; (b) teach an outline course in agriculture, and (c) help the farm boys make a choice of their life occupation by acquainting them with agriculture as a science and as an art (14:288-289).

Others also advocated the introduction of courses in the theory and practice of agriculture into the secondary schools in or near rural communities (11:XLIX). Wilson emphasized the value of agriculture in the high schools as a

means of helping the young farmers go to the agricultural college (16:LXVII-LXIX).

In 1898 the delegates to the twelfth annual convention of the Association of American Agricultural Colleges and Experiment Stations officially adopted a resolution which included, among other things, the favoring of introducing nature study and instruction in the economic sciences in the public high schools (13:50). No record was given of the discussion on the resolution, and consequently no exact reasons for, or objectives of, the resolution can be cited.

Although True, Hays, Liggett, and a few others advocated secondary agricultural education before 1900, there was no general movement in favor of the introduction of agricultural courses in the public high schools. Some reference books and textbooks on agricultural subjects were being published, but even those were relatively few in number. In general, the national organizations and associations had not given very much attention to introducing agricultural courses in the public high schools.

The agricultural education programs which were advocated seemed to be based on the science of agriculture. The students were to be taught the best methods of using tools and equipment, the good and bad qualities of livestock, and something on agricultural bookkeeping. The

recommended content could be further summarized as the ABC's of agriculture, with emphasis upon the science of agriculture, plus an appreciation for the opportunities of further education at the agricultural colleges.

The methods advocated seemed to deal with two phases of the local program: (a) the teaching of agriculture, and (b) the introduction of agriculture into the high school program. Local schools were urged to hire a science teacher who had attended an agricultural college. This person was to offer, among other courses, a course in the theory and practice of agriculture. The teachers of agriculture were to use lectures and textbooks, supplemented by visitations to farms for special subjects.

1900-1910

The movement for promoting agricultural education in public secondary schools seemed to gain much momentum during this period. In 1906 True reported on the attention given it by many organizations and prominent people.

> The teaching of improved methods of agriculture to the masses of our agricultural youth has recently been advocated by the President of the United States, the Secretary of Agriculture, a former United States Commissioner of Labor who is now the president of a Massachusetts college, the president of one of our greatest railroads, the president of the University of Virginia, the superintendent of schools of New York City, acting as president of the National Educational Association, and by such bodies as the National Educational Association, the National Grange, and the National Irrigation Congress. (33:151)

Agricultural education in public high schools.

Three types of schools for secondary agricultural education seemed to receive a certain amount of support by national leaders during this period: (a) schools of agriculture at colleges of agriculture, (b) agricultural high schools, and (c) agricultural courses in regular public high schools. The schools of agriculture and separate agricultural high schools were both referred to as special agricultural high schools. True advocated separate agricultural high schools as well as a plan of including agricultural courses in the public high schools (34; 37:46; 39). Hays was a strong proponent of separate agricultural schools (22). A N.E.A. committee in 1905 concluded that the establishment of special agricultural high schools was essential to the proper development and organization of the rural school system (25:8). However, by 1908, the same committee urged the development of different types of schools, according to the needs of the various areas of the United States (26:445-446).

Near the end of this period a majority of the opinions expressed through the national groups seemed to favor the implementing of agricultural education through regular public high schools rather than through either separate agricultural high schools or schools of agriculture. Agricultural education was advocated as a necessary part of the

total public education program (17:22; 18:1201; 19:87; 40:1099). Hays and Morse still advocated a system of state agricultural high schools as the best method of implementing secondary agricultural education but they seemed to represent a minority (27:19; 31:175).

Objectives. There was no special emphasis given to objectives or purposes of the courses in agriculture during this period. Preparation for farming was one of the objectives advocated, but many other objectives were also given. There seemed to be no general agreement on the objectives. Some of the objectives given for agricultural education in public secondary schools could be summarized as follows:

1. The agricultural course should be satisfactory for general training as well as for elementary instruction in the theory and practice of agriculture (34:499; 37:52; 39:10).

2. The agricultural course should help the students (a) to understand the relationships between the sciences and agriculture, (b) to know about improved practices in agriculture, (c) to interpret and use agricultural information from farm papers and experiment stations, and (d) to be good homemakers and progressive citizens (17:24; 30:88; 32:257; 34:486-487; 35:4; 40:1098).

3. The agricultural course should help prepare the students for entrance to agricultural colleges (35:4).

4. Some secondary objectives of the agricultural course should be (a) to contribute to the liberal education of those going into other vocations; (b) to enrich the science teaching in high school; (c) to prepare teachers for rural school teaching; and (d) to keep the school in touch with the people (40:1098).

There seemed to be a rather sharp distinction between the objectives for agricultural education in agricultural high schools and those given for agricultural education in the regular public schools. True was quite specific in advocating the teaching of both the art and science of agriculture in the separate agricultural high schools, and only the science of agriculture in the regular public high schools (36:1205-1207).

In 1908 True defined agriculture as ". . . the theory and practice of producing and utilizing plants and animals useful to man." (36:1202) He further defined the theory and practice in terms of the science and art of agriculture. The art of agriculture was the "practice" of producing and utilizing crops and animals. The science of agriculture was "a body of knowledge" relating to the production and use of plants and animals (36:1203).

Enrollment in agricultural courses. Relatively little attention was given to the specific question of who should take the agricultural courses. Seemingly, it was

assumed that the courses were primarily for students coming from farms. True stated that agricultural education should be available in the schools of the nation, so that all the youth in agricultural communities would have the opportunity to have instruction in agriculture (37:47). Apparently there was no discrimination between boys and girls for the agricultural courses. Warren and Burnett, in their statements of objectives of high-school agriculture, included both boys and girls (19:87; 40:1098).

Hays and Warren gave consideration to the possibility of city boys taking agricultural courses. Their recommendations were that city boys should first acquire farm experience, perhaps through farm placement in the summer, and then, if still interested in agriculture, enroll in the agricultural course in the high school (28; 40:1102).

Agricultural course content. The course in agriculture was considered by some to include all the subjects taken in high school by students taking agriculture. Others defined the agricultural course as the agricultural subjects taken during the high-school work. Because of this lack of agreement on the use of the term, and because of many failures of writers to clearly define the sense in which the term was being used, it was difficult to make generalizations about the things to be included in the agricultural course. However, most of the groups advocated

that the students taking agriculture should still take a large part of the general education ordinarily required in the high school (30:88; 34:499; 35:4; 37:46). There was some concern that the agricultural course would be too narrow, "too vocational," and consequently many references were made to the need for including subjects besides agriculture in the course.

Agricultural courses as a part of the high-school program. When agricultural education was recognized as desirable in the public high school programs, there was need for specific ways of introducing the new course into the new schedule of all the courses offered. The prerequisite courses and balance of courses were of concern early in this period. Some advocated that, when agriculture was introduced into the high school program, ". . . it is presumed that the courses in physics, chemistry, botany, and zoology will be so shaped as to form an appropriate introduction to the more formal instruction in the different branches of agriculture . . ." (37:48) Chemistry and botany were recommended as prerequisites for courses in agriculture (38:7). In general, it was advocated that agriculture should be introduced as a separate course rather than as a part of the several science courses offered, and that the courses in agriculture should be only a part of the total high school program taken by the student.

Some rather specific recommendations were made for introducing the agricultural courses. As early as 1902 a committee report, Methods of Teaching Agriculture, recommended that high schools could have either a four-year course or a three-year course in agriculture (37). Later in this period more specific recommendations were given which included the amount of time to be spent each day in the agricultural classes. Crosby advocated both four-year and three-year courses (20; 22; 23; 37). True recommended a four-year course that took five hours per week (35). The agricultural courses advocated by True included the following possible combinations of time to be spent on agriculture: (a) Four hours per week (22:262); (b) daily thirty-minute periods (23:398); and (c) daily thirty-minute recitation periods plus from three to five thirty-minute laboratory periods per week (20:410). True also advocated a four-year course with five hours per week spent on agriculture (35).

Schools were urged by Hays to provide land beside the schoolhouse to be used by the pupils in the study of agriculture. Several others advocated that the schools should have land available for field demonstrations (28:136; 38), and for the teacher to use for simple experiments.

Methods to use for teaching agriculture. There was considerable concern over the manner by which agriculture

should be taught. There seemed to be quite common agreement that agriculture should not be a textbook subject. Teachers of agriculture were urged to be aware of and to use the great wealth of illustrative material available in every community. The instruction was to deal with living objects and real things, not mere theory (24:1208). Curtiss predicted that success in teaching agriculture would come only if the students were brought into contact with actual practice in agriculture (24:1208).

A committee report in 1902 on secondary courses in agriculture made no reference to either laboratory work or shop work as a part of the method or content of instruction. Seemingly, the emphasis was on the technical content of the agricultural subjects and the teachers were to teach by the lecture-recitation method (39).

Within a few years the emphasis was definitely on other methods of instruction. In 1909 Burnett advocated that for teaching agriculture in high schools, "all of the subjects, so far as possible, should be taught by laboratory methods or by actually doing the thing itself." (19:89) The "doing" which was advocated was, seemingly, based upon "practicing." Practice work was quite generally advocated and consisted essentially of laboratory exercises, demonstrations, simple experiments, and field exercises (23; 30; 38). These student activities, such as pruning trees and

culling chickens, were called practicums. They were considered an extension of the classroom instruction and were to be conducted under the direction or supervision of the instructor.

Student participation in the agricultural classes was advocated. The students were to be more than passive listeners. Teachers were encouraged to have students prepare and present demonstrations, conduct simple experiments, and keep notebooks with write-ups of demonstrations, field trips, and laboratory work.

The teachers were urged to use charts to illustrate lectures; school land for demonstrations, field test plots and other uses; and out-door practicums through use of livestock on nearby farms, the local butcher shops, and farm implement stores. Contests, such as grain judging, sponsored by local business people, also were recommended. In general, the teachers were to use concrete illustrations rather than artificial ones, participation by the students rather than mere sitting and listening, and cooperation with local business men and farmers for increasing the scope of materials available for instructional purposes (22).

There was no mention of concurrent farm experience programs as a method of teaching agriculture. However, in 1910 Crosby advocated the use of planned summer experience

programs for students who had taken agriculture during the regular school year. Crosby's description of a desirable kind of summer program was as follows:

> During the summer the school conducts experiments on the home farms of its pupils. All boys in the high-school department are expected to perform at home an experiment of their own selection during the summer vacation. This is in order to bring the work of the school to the people at large, as well as to emphasize concretely the instruction of the winter in the mind of the student. (21:187)

The agricultural teacher was to visit these experiments during the summer and advise the students concerning them (21:188).

Agricultural subject matter--how determined. The method of determining "what" to teach received attention by the groups included in this study. True advocated some criteria for determining the "content" when he stated that the needs of the farmers as men, citizens, and homemakers should be kept in mind (34:499). Other leaders later advocated that the body of agricultural knowledge formed primarily by agricultural colleges and experiment stations should be put into available form by the agricultural colleges for use in elementary and secondary schools (25:8). Still others advocated that the secondary courses in agriculture should be based partially on local farming conditions (38:2). In general, it seemed that the course content should be determined primarily by experts in technical agriculture, and based upon actual problems in agriculture,

but not necessarily the problems of individuals or groups within the class or community.

Agricultural subject matter--what should be taught each year. During this period instruction in agriculture was usually interpreted to mean formal classroom instruction. Committee reports in 1902 (37) and 1905 (25) on proposed content for high school agricultural courses presented some of the first specific recommendations for public high schools. A committee from the Association of American Agricultural Colleges and Experiment Stations in 1902 recommended that the high school agricultural course include agronomy, zootechny, dairying, rural engineering, and rural economy. The four-year program they advocated included the following arrangement of subjects:

First year--general and economic botany
Second year--general and economic zoology
Third year--agronomy and rural engineering
Fourth year--zootechny, dairying, and rural economics and farm management.

They also advocated a three-year program which combined the first and second year subjects of the four-year program in the second year.

Agricultural subject matter--specific subjects. The committee from the Association of American Agricultural Colleges and Experiment Stations (37) advocated specific subjects for the agricultural courses in the high school. Some of the details given for the subjects proposed for each year were similar to those in the following outline:

I. Agronomy
   A. Climate
   B. Soils
   C. Fertilizers
   D. Farm crops
      1. Botany
      2. Varieties
      3. Culture
      4. Harvesting
      5. Preservation
      6. Uses
      7. Enemies

The teaching of the science of agriculture was emphasized to the extent that most of the proposals for agricultural courses seemed to be based upon that one kind of subject-matter content. Practically no details were given in proposed courses to support the teaching of improvement in home living.

Emphasis upon the science of agriculture was also evident in the development of sharp lines of agricultural subject-matter for the high school programs. Courses such as farm crops, animal husbandry, diseases of plants and animals, plant breeding, horticulture, and dairying were often referred to as desirable parts of high school agricultural programs (35).

Agricultural subject matter--how organized. Bailey suggested two methods of organizing course content but did not give a preference for one over the other: (a) work on problems, choosing those that are applicable to the community, and (b) endeavor to develop in the pupil a comprehensive view of the practice of agriculture in general (17:20). Apparently, more of the emphasis during this period was ac-

tually given to organizing the courses by the second method mentioned by Bailey. The examples of course content given in most of the suggested courses were organized on a logical basis and teachers were urged to follow similar procedures.

Agricultural clubs. Boys' and girls' agricultural clubs received very little attention or discussion at national meetings prior to 1905. The Report of the [N.E.A.] Committee on Industrial Education in Schools for Rural Communities in 1905 advocated the organization of boys' and girls' clubs for definite work outside of the school (26: 398). However, the purposes of the clubs, their enrollment of members, and relationships to the secondary school program were not clearly defined. In 1910 Howe advocated agricultural clubs as an extension of the elementary and secondary public education programs (23).

Specific methods of organizing clubs were given, but the relationships between the clubs and the secondary school programs in agriculture were very vague. Seemingly, the school was to provide some leadership to the clubs, but even that was not clearly stated.

1911-1916

Agricultural education in the public secondary schools during this period seemed to receive more emphasis as vocational education than in previous years. There was

definite recognition of different objectives for various programs of agricultural education, and the methods of instruction advocated also seemed to vary somewhat according to the stated objectives for the program.

Objectives in agricultural education. Agricultural education was advocated by some as a cultural subject; others advocated it as a vocational subject. As a cultural subject, the content of agricultural programs was to fit the controlling purpose of teaching ". . . people to think straight on all matters pertaining to agricultural production and rural life, and this applies to the city people as well as to the country people." (71:193)

The objective for vocational courses in agriculture was often given as training for farming (44:20; 59:49). The alvocates of vocational education in agriculture frequently stated that such programs should prepare the students for the occupations connected with the work of the farm and farm home (60).

Stimson described vocational agriculture as

> . . . that form of vocational training which fits for the occupations connected with the tillage of the soil, the care of domestic animals, forestry, and other wage-earning or productive work on the farm. (66:9)

The Commission on National Aid to Vocational Education in 1914 advocated that agricultural education should provide training for the "occupations connected with the

work of the farm and farm home." (60:41) Farm home was used to refer to training in home economics.

> It should be emphasized here that the term "agricultural education," as used in this report, includes education for the farm home as well as for the farm itself. Hence home economics, so far as it relates to the farm home, is included in the grant for instruction in agriculture. (60:78)

Most of the groups emphasized farming as the objective for vocational education in agriculture. The instruction through the vocational agricultural program was to prepare the students for farming including efficient production and marketing of crops and livestock, as well as development of their farm management abilities (56:6-7; 66: 9; 68:86; 69:30; 71:197).

Brown advocated that agriculture should be the means of enriching the regular high school program by relating the principles of science to the experience-backgrounds of the students. He seemed to advocate agriculture as a method of education.

> It must be distinctly borne in mind that the fundamental purpose of these courses . . . is not vocational education. . . . The aim is the education of the boys and girls through these studies in the belief that in many localities they have greater educational value than the older traditional subjects. (48:11)

In this particular kind of program extensive use of greenhouses and laboratories was advocated. Although the objectives were different from those for vocational agriculture, many of the methods of teaching advocated were the same.

Content of a local program for high school students. For many years a program of agricultural education was considered as primarily a course in agriculture consisting of several agricultural subjects along with other regular high school subjects. During the period 1911-1916 a broader concept[3] of the high school agricultural program was evidenced in the publications reviewed. The teacher of agriculture was urged to include in his program (a) the supervision of home-project work of his pupils during the school-year and especially in the summer, (b) the direction of school agricultural exhibits locally and at the county fair, and (c) classroom and laboratory instruction. Many leaders advocated the use of school-land in the agricultural program. A few advocated club activities as a part of the program of agricultural education.

In the report of the Commission on National Aid to Vocational Education some recommendations were made regarding the minimum content of the agricultural education program in a local public high school. These recommendations included classroom instruction, at least six months of supervised practice either on the home farm or on a farm pro-

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[3]The reader should note that the broader program referred to the inclusion of things in addition to classroom instruction. In another sense, the term "agricultural education" was being defined as "vocational education in agriculture" with practically no reference to several other forms of agricultural education.

vided by the school, and opportunities for practice and demonstration work on a school farm (60:47-48,74).

Agriculture as a part of the high school program. The possibilities for developing agricultural education programs in public high schools received more attention during this period than in previous periods. Although some leaders advocated the development of special agricultural high schools, much more of the attention seemed to be centered on how to implement and improve programs of agricultural education in public secondary schools.

The agricultural course advocated for some rural high schools (48:16) included the following distribution of time:

Subject	Years			
	1	2	3	4
	Periods per week			
English	5	5	5	4
Mathematics	5	5	-	-
Physics or chemistry	-	-	5	5
American history	-	-	-	4
Agriculture, including farm mechanics	15	15	10	8

The above distribution of time was advocated without the utilization of home projects as a part of the program and with agriculture on a "non-vocational" basis.

The method advocated by some for establishing a program of agricultural education as a part of the total high

school curriculum took into consideration home projects and other out-of-school work of the students. Many advocated the use of approximately fifty per cent of the student's school-day for work in agriculture. Many of the advocates of the project method of teaching said the four-year agricultural course should be taught through combined classes (9th and 10th together; 11th and 12th together) with each combined class lasting for a one-half school day. A proposed method of dividing, and utilizing the one-half day for agricultural education, as advocated in 1914 (66:30-31), is shown by the following:

Periods	Major use of time by morning class
9:00-9:45	Agricultural survey (elementary) for about 75 periods during the year
9:45-11:15	Project work or project study for about 300 periods
11:15-12:00	Project work and class discussion of individual projects for about 125 periods

It was advocated that the agricultural subjects should be correlated with the science and other parts of the total educational program. Correlations should be made with the natural sciences, mechanic-arts, mathematics, and the "humanistic" studies. It was also advocated that the agricultural teacher should teach biology (59:51-52).

Methods to use for teaching agriculture. Lectures, recitation periods, round-table discussions, student reports, demonstrations, field trips, and many other methods

were advocated. Throughout this period teachers were urged to use illustrative materials as teaching aids, and to plan with the students the details for field trips. However, one of the outstanding developments during this period was the support given to the use of project-methods of teaching. By the end of this period nearly all of the publications on agricultural education referred to the use of home-projects as a method of teaching agriculture.

Many specific recommendations were given for conducting field trips, working in laboratories, conducting class in the classroom, and utilizing projects. Some groups advocated a pattern of four recitation-lecture periods followed by one period of practicums, i.e., a field trip or some activity where the students actually practiced a particular skill, such as judging horses (65). These methods neither included nor centered around home-projects.

School land was to be used for demonstrational purposes and for accomplishing many of the "doings" advocated. All, or nearly all, of the "doing" advocated was to be in-school situations such as laboratory work, experiments and demonstrations on school land, and group experiments (44; 48; 56). Some other practices advocated in 1911 (47:1140-1141), before project methods were commonly recommended, included:

1. The teaching of agriculture should be seasonal in presentation.

2. The teaching of agriculture should attempt to link the new knowledge with the student's present knowledge and experiences.

3. The students should be taught in terms of their own lives at the time they are being taught.

4. The students should be taught to think in terms of action, application, and accomplishment.

5. Whenever possible, the lesson should be taught in the presence of the living or real object.

6. The teacher should tell the student nothing which the student can determine for himself by a reasonable expenditure of time and effort.

7. Every pupil should be kept actively engaged during the entire class period.

8. The teacher should avoid asking questions which may be answered by "yes" or "no."

9. The teacher should attempt to get students to understand principles rather than merely learn detailed facts.

10. The teacher should close the daily lesson with a problem within the comprehension of the class to be solved by them before the time of the next lesson.

Much attention during this period, as from 1900-1910, was given to recommendations for the proper use of textbooks by teachers of agriculture. Teachers were urged to use materials from the field with the textbook as a source of help when needed, rather than to use field-materials to illustrate what was contained in the textbook (73:888). Some other practices advocated for conducting classroom instruction included: (a) Reports should be given by the students for part of the work; (b) students should keep neat, accurate, and complete notes of reports, discussions,

reference readings, etc.; and (c) books, bulletins, and magazines should be readily available for student reference during supervised study.

Emerging project methods of teaching agriculture. Publications reviewed for the year 1912 contained some references to project methods of teaching agriculture. It was noted that no one method was advocated, but instead, several methods of instruction were advocated which utilized a project of some kind. The home project was hailed by Stimson as the most promising solution to the problem of giving vocational training in agriculture (68:87).

Stimson was one of the first to advocate a rather complete method of teaching agriculture through the use of home projects. The method he advocated was centered on real farming situations for application of things taught in the classrooms. He described the work in terms of part-time work in agriculture, and included the home-projects as a part of the total program.

The home project method of teaching agriculture at this time embodied two distinct features: (a) There should be supervised productive farm work, and (b) the classroom study should be directly related to the productive farm work. Most of the emphasis was to be given to productive projects rather than to either improvement or experimental projects (55). The following is an example of the kind of program advocated for a four-year course using the project

method where the students would spend one-half of their school-day in agriculture (55:269).

First year (9th and 10th grades)
- Kitchen gardening: Vegetables, small fruits.
- Ornamental planting: Shrubbery, flowering plants, lawns.
- Farm shop work: Construction and repair of hot-beds, cold frames, etc.

Second year (9th and 10th grades)
- Small animals: Poultry, sheep, swine, bees--Types, breeding, management, rations, etc.
- Buildings and equipment: For small animals--Plans, cost, etc.
- Home grown crops: For small animals--Kinds, quantities, seeds, soils, place in farm rotations, fertilizing, tillage, harvesting, storage.
- Farm shop work and other construction.

Third year (11th and 12th grades)
- Farm animals: Types, breeding, management.
- Farm buildings: Sanitation and conveniences, plans, construction, upkeep.
- Farm crops: For keeping the animals--rotations, balancing, cultivation, etc.
- Farm machines and implements: Their use and repair.

Fourth year (11th and 12th grades)
- Fruit growing: Orcharding and small fruits not before dealt with, propagation, cultivation, packing, etc.
- Market gardening: Markets, soils, seeds, fertilizers, tillage.
- Buildings and appliances: Plans, devices, implements and machines--cost, use, and upkeep.
- Farm shop work and other construction.

The productive projects were considered basic and teachers were urged to utilize carefully directed project work as a basis for applying the science of agriculture. Stimson stated that in order to learn the skills and business abilities needed in farming the student should actively participate "during the learning period in productive farming operations of real economic or commercial impor-

tance." (68:86) Fundamental to the method of teaching advocated by Stimson was the recommendation that the instruction should be adapted to local crops and situations (67: 32).

Seemingly, there was more than one meaning for home-project and its relation to the agricultural course. The project, as advocated by some, was described as:

> . . . any agricultural undertaking within the resources of the student, chosen early in his course and pursued to the last year, where it is formulated in a graduation thesis showing practical and scientific factors involved, and how they were controlled, with a complete financial accounting. (45:1396-1397)

That definition for home project intensified the emphasis upon the science of agriculture. Not all members of the N.E.A. committee submitting the report (45) agreed with that particular approach to the use of the project. Some believed that freshmen were not ready for elaborate project work and so they advocated that the beginning project should be confined to demonstration work. Apparently they did not advocate a deliberate correlation for the project and classroom work.

In 1914 the report of the Commission on National Aid to Vocational Education (60) tended to represent the viewpoints of many of the national groups interested in agricultural education as well as those interested in other areas of education. The Commission recommended actual

practice in agriculture as an essential method of teaching agriculture.

> The proposal of the commission is, therefore, that such teaching should be accompanied by directed or supervised practice in agriculture, either on the home farm or on a farm provided for by the school, for at least six months a year. (60:74)

Stimson's home-project plan was worked out in greater detail by 1914. He defined a farming project as "something to be done on a farm which involves a limited and definite amount of equipment, materials, and time, and which is directed toward the accomplishment of a specified and valuable result." (66:13) Three kinds of projects were advocated: improvement, experimental, and productive. The project method was divided into three major phases: productive farm work, supervision of farm work by the agricultural teacher, and classroom study directly related to the productive work. The productive projects were classified into main projects (e.g., providing all of the home vegetable supply), and subprojects (e.g., the production of lettuce). Productive projects were to be required; improvement and experimental projects were to be optional (66: 40).

It was advocated that the kind of home-projects should be determined primarily by the content of the classroom instruction. The instructor was to help the students select their projects, from the group assigned to that year

for study, according to the student's ability (66:24-25). It was also advocated that the home project should involve the cooperation of the parents as well as the student for securing adequate facilities and the actual carrying out at home the teachings of the agricultural instructor (59:58, 66:15; 70:35).

The home-project method was sometimes referred to as the part-time education plan in agriculture. In general, the home-project method implied that the student would spend part of the time required for his education in productive farm work at home, and part of his time at school. The farm work and the study at school were to be closely correlated by the agricultural instructor from season to season and from year to year (66:12). Stimson also advocated that the training in agriculture by this method should be such as to make the student acquainted with farm life and affairs in general, and more of a specialist in the fields covered by his projects (66:22). The plan advocated by Stimson for use of the teaching-lay was rather unique for its comprehensiveness as a suggested method. (See page 36.)

Stimson advocated much individual study with careful attention given by the teacher to the needs of each pupil through the adaptation of general principles of agriculture to the specific home farm requirements and facilities. Ex-

tensive use of prepared outlines for project study was advocated as a means of helping students thoroughly plan their projects (43:8; 59:58; 66:57). Local contests in home projects with prizes given by incorporated agricultural groups and others were advocated as a desirable means of promoting home project work (64:16; 66:18).

Summer supervision of home projects by the instructor was advocated as an essential method of carrying on the local program of agricultural education (43:6; 60:74; 66:16). Some other items advocated in the project method were (a) students were to keep exact records on projects, and (b) school was to keep permanent records of individual student progress, abilities, and total project program (66:42, 44).

By the end of this period some additional developments were evident in the project method as advocated by the selected national groups. Group projects were advocated as a method of supplementing home-projects (50:624). It was also advocated that less emphasis should be placed upon the home project in the total agricultural education program (50:626; 63:307). The plan of basing the instruction upon home-projects was criticized by some as being too narrow.

There was a slight change in terminology for the kinds of home-projects advocated. By 1916 the home projects were designated as production, demonstration, improvement,

and management. Home projects were defined as including the following seven requisites:

> (1) There must be a plan for work at home covering a season or a more or less extended period of time; (2) it must be a part of the instruction in agriculture of the school; (3) there must be a problem more or less new to the pupil; (4) the parents and pupil should agree with the teacher upon the plan; (5) some competent person must supervise the home work; (6) detailed records of time, method, cost, and income must be honestly kept; and (7) a written report based on the record must be submitted to the teacher. This report may be in the form of a composition or a booklet. (43:4)

Production projects included those in which the primary purpose was to produce an agricultural product at a profit. Demonstration projects were those in which the primary purpose was to demonstrate materials and methods in agricultural practice. The chief aim of improvement projects was to make an improvement on some phase of the farming, and management projects were for the efficient application of general principles of farm management (43:8).

It was advocated that the student should be given the entire responsibility, if possible, for the work and financial outcome of the project (59:58).

Agricultural subject matter--how determined. The local community was recognized by many leaders as being important when determining the specific subject matter for the course in agriculture. The teachers were urged to study the agriculture of the community before determining the content of the instructional program. Community sur-

veys were to be used to determine the importance of such items as drainage and soil types; methods and systems of farming; crops, livestock, and marketing facilities; the farm people, their churches, and schools; and the farm management practices used in the community (45; 46:806; 48:10; 52:17-19; 53:14; 57:1133). The extent to which such studies should affect the exact course content was not clearly defined.

Main advocated a rather uniform agricultural course of study in all schools. The general content was to be determined by a national committee of experts. Then some competent authority in each state was to select the specific content for that state from the national outline (58: 811). This proposed method of determing the content seemed to be based on the assumption that agriculture should be taught as a definite body of subject matter to be mastered.

Stimson advocated the use of an advisory committee composed of five of the best local farmers to assist the agricultural teacher in determining the content of the local program (67:31). Higbie advocated involving local people--bankers, merchants, physicians, county officers, others--informally in identifying the needs as a basis for determining the local course (52:18).

Some leaders advocated the consideration of five major factors when determining the agricultural courses: (a) needs of the students; (b) agricultural and social needs of

the community; (c) physical facilities, land, and equipment of the school; (d) preparatory courses taken in elementary school; and (e) demands of colleges through minimum entrance requirements (59:50-51). The exact nature of the needs of the students was not defined or illustrated, nor was any information given as to who should determine the needs (the teacher? the students and the teacher? others?).

Agricultural subject matter--what should be taught each year. The content advocated for high school instruction in agriculture was often given through specific outlines of subject matter. Some groups advocated primarily a two-year program, while others favored a four-year program. In the two-year program the agricultural subjects were to be taught the third and fourth years. The courses in the third year were to include agronomy, agricultural engineering, and agricultural economics; the fourth year, animal production and dairying (65:5). Two general patterns of course content were advocated by those favoring four-year courses. Some groups advocated a program as follows (47: (47:1150-1152):

9th grade--farm crops
10th grade--animal husbandry
11th grade--farm mechanics
12th grade--soils and horticulture

Others favoring a four-year program suggested the following agricultural subjects (48:16):

9th grade--agronomy, farm carpentry

10th grade--animal husbandry and dairying, farm blacksmithing

11th grade--horticulture, road building (½ yr.), forestry (½ yr.)

12th grade--rural economy and farm management, physiography

However, both of these refer to courses which were supposedly non-vocational courses. The arrangement of agricultural subjects recommended for courses described as vocational was somewhat different since the courses were to be based on projects (66:23). The 9th and 10th grades were to be combined into one class, and the 11th and 12th grades also were to be combined into one class. The proposed courses were to be alternated each year.

9th-10th grades (even years)--Plant projects (elementary)

9th-10th grades (odd years)--Animal projects (elementary)

11th-12th grades (even years)--Animal projects (advanced)

11th-12th grades (odd years)--Plant projects (advanced)

Agricultural subject matter--specific subjects. The content of the agricultural courses advocated by the groups studied tended to vary somewhat according to their stated objectives for the course, but there seemed to be much similarity in the specific content and teaching methods advocated, except for the use of home-projects in vocational courses.

The content advocated by some emphasized the science of agriculture with emphasis upon soils and the business of farming (44:20). Others said the content should place a strong emphasis upon botany and biology as applied in agriculture (45:1395).

Others who advocated a science of agriculture taught through elaborate use of laboratories, greenhouses, and experimental plots, also advocated agriculture as a general education course rather than as preparation for a vocation. The kind of content which they said should be included is illustrated by this outline for agronomy and farm carpentry to be taken by freshmen (48:16-18).

Agronomy

1. Elements of plant life: Study of seed, root, stem, leaf, reproduction.
2. Soils: Origin, kinds, uses, soil water, plant food, care and improvement.
3. Seed selection and testing: Judging, germinating, analyzing.
4. Fertilizers and manures: Composition, value, relation to soils and crops, lime.
5. Insects: Kind, harm, benefit, life habits.
6. Farm crops: Kinds, cultivation, uses, care.
7. General handling of field crops.
8. Experimental work in greenhouse.
9. Practical work in school garden.

Farm Carpentry

1. Construction and proper use of carpenter's tools.
2. Reading and drawing blueprints.
3. Plan for each article finished before construction begins.
4. Study of building plans and construction, with practice in estimating and figuring the cost.

5. Mechanical drawing.
6. Construction of wooden articles needed on farm and for home and school use.
7. Repairs to school building.
8. Practical work in construction and repairing.

Many outlines of agricultural subject matter were proposed during the early part of this period. During 1915 and 1916 more attention was given to the specific content of enterprises and other areas for instruction than to the total course in agriculture. The content recommended seemed to be based on the primary objective of training young men for efficient country life and particularly the training of them to be farmers (59:49). Some of the specific areas of content advocated were weeds, alfalfa production, pork production, poultry management, San José scale, judging dairy cows, beekeeping, and others (see Appendix B, Agricultural Education Monthly).

Agricultural subject matter--how organized. The importance assigned to the agricultural subject matter was evident when the organization of it was studied and the methods of teaching reviewed. During the early part of this period most of the emphasis was upon the science of agriculture. Therefore, as expected, the recommendations by many groups were that the students should first acquire an understanding of the scientific principles before studying the application of those principles in crop and livestock production. Nearly all suggested course outlines

were based on a botanical and/or biological approach to the presentation of subject matter (65). Since the growing of plants was considered by some as a basis of agriculture, they advocated that a study of plant life should naturally precede other agricultural study. The subject matter was to be organized so as to start with botanical and biological features of the subject, then proceed to scientific facts and principles, and finally to experimental work, demonstrations, and home-farm applications (41; 54; 61; 72).

Another method of organizing the subject matter received considerable recognition during the closing part of this period. The method was based on the chronology of activities involved in the carrying to completion a particular farming enterprise. The development of the home-project method probably was quite influential in the promotion of this particular organization of the subject matter. Even before this development, the seasonality of topics was considered to be quite important. Teachers were urged to introduce the study of topics according to their seasonal appropriateness (45:1392-1393; 47:1140). The use of project study outlines probably systemized the study into the chronological sequence. Teachers were urged to prepare, or have the students prepare, outlines for project study. The suggested organization of the outlines is illustrated by the example which follows:

Raising Pigs on Own Account--A Production Project

I. Shall I raise pigs for my project?
   1. Do I like pigs?
   2. Is this section suited to the profitable production of pork?
   3. Do pigs fit in well with our farm management plan?
   4. Is cholera or any other disease liable to prevent profits?
II. What shall be my aim in raising pigs? . . .
III. How shall I get a start? . . .
IV. Can I give breeding animals proper management? . . .
V. How shall I care for young pigs? . . .
VI. How shall I fatten my pigs for market? . . .
VII. How shall I care for my pigs during the winter? . . .
VIII. What kind of hog house shall I build? . . .
IX. How can I prevent disease? . . . (70:36)

Farm shop instruction. Relatively little attention was given to farm mechanics as a phase of agricultural education. It took a back-seat to recommendations dealing with other phases of the production of crops and livestock. However, many groups advocated that farm mechanics should be a part of the agricultural education program (44; 46; 47; 48; 49; 51; 55; 56; 59; 62; 66; 70). Some said that it should be taught as a separate subject in one or more of the high school grades (47; 48; 62). Others said it should be taught as an integral part of the regular agricultural classes by close correlation with the needs of the home projects (55; 66), or correlation primarily with the classroom instruction (49; 51; 70). Others suggested that the exercises in mechanic arts should have a definite relation to the farm and the farm home (59).

Very little specific content for the farm mechanics work was advocated. Some recommended that the boys be taught to do the mechanical work of the farm in such areas as rope, farm power, farm buildings, farm machinery, surveying, tile drains, terracing, irrigation, and roads (62). The following is representative of the kind of content advocated.

I. Rope work
   A. Knots and splices
   B. Rope halter
   C. Casting horses and cattle

II. Farm power
   A. Fitting collars on horses
   B. Hitching--one to ten horses
   C. Repair of harness
   D. Naming parts of gas engine
   E. Wiring engine
   F. Running gas engine
   G. Troubles on gas engine
   H. Belt lacing
   I. Soldering

III. Farm machinery
   A. Naming parts--plow, cultivator, mower, binder, wagon, manure spreader, drill, disk, harrow, and ensilage cutter
   B. Making list of repairs for machine
   C. Assembling a machine
   D. Operation of a corn planter
   E. Calibration of a grain drill
   F. Removal of stumps--pulling, burning, dynamiting

Agricultural clubs. Agricultural clubs for boys and girls had been organized as early as the last part of the nineteenth century. Probably they were first organized as a part of the nature-study movement in the rural elementary schools. In the literature reviewed for this period, no

mention was made of agricultural clubs until 1913. At that time Balcomb reported on the success of the boys' and girls' clubs which promoted individual ownership of crops and livestock (42:808). However, he made no specific recommendation about the use of clubs, or how they would fit into the high school program. He referred to the success of boys' corn clubs and girls' tomato clubs, but failed to define his meaning for success.

The N.E.A. Committee on Courses of Study in Agriculture reported in 1913 that boys' and girls' club work should be a part of agricultural education. The following is all they reported on clubs:

> The work of the various boys' and girls' club organizations, either as an outgrowth of the work in agriculture and home economics given in the school, or as an initiatory movement in establishing these courses in the schools, is an important factor in agricultural education. (46:806)

The committee gave no further details on how to organize a club, or just what was meant by a club. It is not clear from their report whether they were advocating the club work as a part of the elementary or the secondary school programs.

In 1915, Lane stated that the high school agricultural education program should include organizing and following-up boys' and girls' clubs by the teacher of agriculture (57:1134). However, again the evidence was very cloudy as to whether the clubs were to be formed among in-

school or out-of-school boys and girls; or elementary or secondary boys and girls.

In general, some mention was made during this period of boys' and girls' clubs as valuable in agricultural education but nothing specific was advocated regarding either a method of developing them as a part of the high school program or the content of the clubs' activities and purposes.

Measuring and evaluating results in agricultural education. Very little, if any, attention was given during this period to practices for measuring and evaluating the results in agricultural education either as changes in individuals, communities, or both. In 1912 Howe stated that the success of teaching agriculture should be measured by the extent to which the instruction was realized in actual betterment of practice on the home farm (53:14). He gave no details on who should do the measuring, or how the measuring should be done. For all practical purposes, no practices were advocated to be used or followed in measuring and evaluating the progress of individuals or communities in agricultural education during this period.

1917-1928

The year 1917 was a milestone in the development of programs of agricultural education in public high schools.

The passage of the Vocational Education Act, commonly called the Smith-Hughes Act, gave impetus and direction to the movement to extend vocational agriculture into the public high schools throughout the length and breadth of the United States. Embodied in the Vocational Education Act were several guiding principles for promoting and developing local programs of vocational education in agriculture. The practices advocated between 1917 and 1928 illustrate the great impact that the federal legislation had upon the kinds of practices advocated by the national groups.

Four basic provisions written into the Vocational Education Act (106) were guides for practices advocated by many of the groups for developing vocational agriculture in local schools. Those four provisions were as follows:

1. Such education shall be under public supervision or control;

2. The controlling purpose of such education shall be to fit for useful employment;

3. The education shall be designed 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;

4. The schools shall provide for directed or supervised practice in agriculture, either on a farm provided by the school or other farm, for at least six months per year.

Most of these provisions were originally a part of the report by the President's Commission in 1914. However, as integral parts of federal legislation, they became much

more significant. It should be noted that they have remained unchanged from 1917 although many of the practices advocated have changed.

During this twelve-year period, the total amount of information on agricultural education published by the selected groups and organizations seemed to be about the same as for the period 1910-1916. However, there was a striking decrease in the amount of material published about agricultural education in public schools by the U.S. Department of Agriculture and the Bureau of Education. The Federal Board for Vocational Education, which was created in 1917, published a majority of the materials on agricultural education and specifically on vocational agriculture. Therefore, the practices advocated which have been reported herein tend to come primarily from the materials published by the Federal Board for Vocational Education.

Objectives. During this period more of the publications dealing with agricultural education included specific statements of objectives than was the case in any of the previous periods.

The objectives given for agricultural education during the period 1917-1928 were generally for vocational agriculture. The viewpoints for agriculture as an informational or cultural subject were expressed in relatively few of the publications. Most of the objectives stated were for agriculture as a vocational subject with actual farm prac-

tice as the central feature. Only one publication by the selected groups emphasized a threefold program of agricultural education.

The report of the N.E.A. Commission on the Reorganization of Secondary Education emphasized agricultural education as more than vocational agriculture. The report contained recommendations for the devotion of some time in the public schools to the study of agriculture. It described the aims of such agricultural instruction in Junior-Senior high schools as non-vocational, prevocational, and vocational (104:7).

The vocational agricultural course was to help students develop skills for plant and animal production as well as to contribute to the development of desirable farm communities (104:8).

The objectives advocated during this period for vocational agriculture were usually given for the productive phases of farming. The statements of objectives in a majority of the references were centered around selected provisions of the Vocational Education Act. Nearly all of the publications on agricultural education from the Federal Board for Vocational Education during this period referred to the objective for vocational agriculture as "to train persons, who have entered upon or who are preparing to enter upon the work of the farm, for proficiency in farming."

Proficiency in the production and marketing of livestock and crops formed the basic objectives advocated for vocational agriculture.

The objective of vocational agriculture as provided in the Vocational Education Act was ". . . 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." (106:57) Relatively few of the publications (89; 92) included in the statement of objectives the phrase "or of the farm home." When it was included it was never explained or defined by examples. Usually the interpretation dealt only with the age factor and nothing was given about the meaning of "work of the farm or of the farm home."

In general, the objectives for vocational agriculture were more prominent in the publications than in previous periods. The objectives were usually for development of competency in the economical production and marketing of agricultural products. Proficiency in specific farming occupations in the performance of ownership, management and operation functions of farming, was the objective advocated for local programs of vocational agriculture (86; 89; 92; 96; 97; 108; 112; 113). A secondary, or corollary, objective of developing the student's abilities as a good citizen was given in a few publications (84; 93; 104; 105; 114; 122).

Enrollment in vocational agriculture. Very few, if any, of the publications contained information on who should be enrolled. The provisions of the Vocational Education Act were often quoted or paraphrased to describe the purpose of vocational agriculture, and therein set forth two qualifications for enrollment in the courses: The students should be over fourteen years of age, and the students should have already entered or be preparing to enter upon the work of the farm or of the farm home (74; 89; 92; 97; 106; 108; 114).

During this period very few practices were advocated for selecting the students to be enrolled in vocational agriculture. The bulletins issued by the Federal Board for Vocational Education often explained the age factor as a basis for selecting students, but the vocational interest factor was merely stated with no accompanying explanation. In general, it was implied that vocational agriculture in the public high schools should be for boys with no mention made of girls.

Content of high school programs of vocational agriculture. Many recommendations were given for the things which should be considered as a part of the program of vocational agriculture. It may be recalled that in previous periods most of the emphasis had been given to the classroom instruction. During 1911-1916 home projects were ad-

vocated as another essential phase of the program. Even greater emphasis was given during 1917-1928 to the place of projects in the local program of vocational agriculture.

It was recommended that the project program should include productive projects, improvement projects, and supplementary farm practices, all as a part of supervised practice work.

Phases of the program advocated in a majority of the materials reviewed included classwork, supervised practice on home farms, and school land for demonstrations and directed work in agriculture. Relatively few publications contained recommendations for farm mechanics as a definite part of the program of vocational agriculture (96:32). Some advocated farm mechanics as an optional part of the program.

Promotional activities were advocated in one bulletin by the Federal Board for Vocational Education in 1925 as an essential part of the local program of vocational agriculture. It was advocated that "a detailed program of promotional activities should constitute a part of every teacher's annual program of work." (85:2) The promotional activities described were (a) talks by the teacher to groups in the school and community; (b) exhibits at fairs, school, and business houses; and (c) articles for newspapers, journals, and educational publications. It was also advocated

that the promotional activities should include an annual father-son banquet (85:62).

In general, during this period, it was advocated that the content of a local program of vocational agriculture for high school students should include classwork, supervised farm practice, school land, and perhaps some work in farm mechanics. Practically none of the recommendations included advisory committees as an essential part of the program. Relatively few published materials contained recommendations for agricultural clubs as a part of the program.

Vocational agriculture as a part of the high school program. Recommendations were quite frequently given during this period for fitting vocational agriculture into the high school program. In general, the recommendations were for not less than fifty percent of the school time to be devoted to instruction in agriculture, including the supervised practice work: Not less than 450 minutes of classroom instruction per week throughout the school year, and an equivalent amount of time for directed or supervised practice (89:17; 92:14).

In 1920 an outline of a recommended practice for dividing the one-half school day for agriculture was presented (115:11). This may be illustrated by the following suggested weekly schedule:

Period	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-9:40	- - - - - - - - - Supervised Study - - - - - - - - -				
9:40-10:20	- - - - - - - - - - - Recitation - - - - - - - - - -				
10:20-10:40	- - - - - - - - - - - - Recess - - - - - - - - - - -				
10:40-12:00	Project study and practical exercises	Shop practice	Project study and practical exercises	Shop practice	Project study and practical exercises

It was apparent that this recommended daily schedule tended to follow the pattern originally advocated by Stimson in 1914. In 1922 Stimson still advocated a daily schedule quite similar to his earlier recommendations. He was quite specific in his recommendations and advocated that one-half of the school day be devoted to agriculture, one-quarter to humanities, and one-quarter to the study of science (118:14). He advocated a curriculum of more than vocational work in order to make the total education of the boy more nearly achieve the goals set forth in the cardinal principles of secondary education.

One publication contained the recommendation that a teacher should have only 12-20 students for full-time agricultural training. Each student should have projects requiring at least 1,200 hours of work per year, and also have related science and social studies requiring at least 600 hours per year (117:1034).

Vocational agriculture, as one-half of the school-day, was definitely emphasized during this period. In previous periods there was less agreement as to the amount of time to be devoted to agriculture and also fewer references to specific amounts of time being set aside for vocational agriculture.

Methods to use for teaching agriculture. During this period national leaders gave more emphasis to methods of teaching than in previous periods. Most of the references to methods of teaching were found in the materials issued by the Federal Board for Vocational Education and the United States Department of Agriculture. Publications by the United States Department of Agriculture pertaining to agricultural education in public schools were practically discontinued by 1923. At that time, the Federal Board for Vocational Education became the principal source of published materials on vocational agriculture.

Specific suggestions were made for teachers to use in teaching vocational agriculture. The practices advocated included formal surveys by students, classroom discussions, laboratory exercises, individual and group projects, and practicums. Later in this period emphasis was given to job analysis as a method of teaching.

Teachers were urged to use formal surveys as a means of determining local agricultural situations and also as a method of teaching. They also were urged to have the stu-

dents conduct the surveys and tabulate the results (75:82). The use of surveys was less frequently advocated near the end of this period than during the years 1917-1921.

Teachers were urged to use many illustrative materials as well as to take field trips to see the actual things being studied. The kinds of illustrative materials (bulletins, daily papers, charts, slides, and specimens) advocated were the same as in the period 1911-1916. More emphasis was given during this period to the use of practical work as a part of instruction--practice in the thing being studied. Teachers were urged to link the classroom work with some practice on the farm if possible: Students should learn judging of horses by practice and study of scientific principles (80:2). In general, the pattern of instruction advocated was classroom discussion and study to be followed by practicums and/or home projects. In this case the home projects and practicums were to be more or less an outgrowth of the classroom discussion.

During this period there was considerable change in the methods advocated for using projects as a means of teaching. The terminology used reveals some of the changes which evolved: projects, home projects, supervised practical work, supervised practice.

Teachers were urged to correlate all phases of animal husbandry and the teaching of biology (83). Instruction in crops and soils was to be correlated with botany.

In all the agricultural subject matter a seasonal sequence of topics was to be followed, as nearly as possible.

Before 1921 most of the "doing" which had been emphasized in the methods of teaching was physical--manipulative processes. The practicums and projects were considered ways of having the students learn by doing. Materials published in 1921 contained recommendations for teachers to base classroom instruction on farm jobs. These farm jobs were to be classified as primarily managerial or operative. These references were some of the first to emphasize the managerial kinds of doing as an important part of the instruction (111).

Many writers included the use of projects in their methods of teaching agriculture. Stimson was one of the few who described the use of the project as a definite method of teaching (118:15). In 1925 a bulletin published by the Federal Board for Vocational Education gave many details on methods of teaching vocational education in agriculture (122). In this bulletin farm job analysis was advocated as a basis for selecting and organizing teaching units. Teaching units were to be set up from farm jobs, but the jobs were not necessarily a part of the students' projects.

> Since a farm job is a natural and basic unit of work in a farming occupation, it serves as an excellent basis for setting up corresponding teaching units. By teaching unit is meant a portion of in-

> struction which can be handled more or less independently of other portions and which can be completely taught as one "teaching job." Moreover, each teaching unit should be organized on the basis of a farm job because such an organization insures a direct and effective application of the instruction to the type of farming for which preparation is being given. (122:2-3)

The farm jobs, from the viewpoint of teaching, were to be classified as either operative units or managerial units, depending upon the type of activity or ability involved. With this basic analysis it was advocated that for managerial units the teacher should have objectives of constructive and effective thinking. Operative and managerial jobs were to be separated for teaching so that the students could concentrate on only one job at a time (122:4).

In the methods of teaching advocated in this bulletin a distinction was made between the kinds of "doing" in which students should be directed or supervised. The operative abilities were to be ". . . acquired by practice of the job operations according to standard practice and with intelligent application of any technical knowledge of materials and working conditions." (122:3) Managerial abilities were to be acquired by practice in making decisions involving managerial factors.

A specific method was advocated for analyzing the managerial jobs. First, the managerial job should usually be resolved into minor decisions, that is, determine the kind of decisions to be made; and second, determine the

factors which should be considered in making each of the decisions. For example, in buying seed corn, some of the decisions to be made were given as (a) what variety to grow, (b) from what source to buy the seed, (c) when to buy, and (d) how much to buy. The factors to be considered in making these decisions were elements, conditions or influences which affected the results (122:3-4).

Some methods of stating teaching-objectives were advocated. Teachers were urged to express the objectives in terms of the kind of <u>doing ability</u> which was to be developed. These doing abilities were described as four general types.

Type I. Operative ability up to occupational standards having to do with manipulative activities and sensory judgment, such as testing milk, culling hens, plowing, or filing a saw.
Type II. Operative ability having to do with routine mental activities, such as computing by a formula.
Type III. Ability to secure and organize information relating to a given job.
Type IV. Ability in dealing with managerial problems. (122:5)

In general, the methods of teaching advocated in this one bulletin centered around carrying instruction to the level of a doing ability. This doing ability might be managerial or it might be operative. In either case the teacher was to organize his teaching around the following phases: The teaching objective, preparing the student to learn, presenting the lesson content, supervising practice,

and testing the results of teaching. The pupil was to learn to do by doing, and to think by thinking.[4] In the description of teaching a lesson no emphasis was given to relating material to projects until during the laboratory or practice time. The task of the teacher was to present background or related information during the question-discussion period. Some practices advocated for teaching by the farm job analysis were:

1. Selection of teaching units after considering all of the jobs in each enterprise of the course
2. Thorough lesson planning
3. Analysis of each enterprise into its jobs

Other bulletins by the Federal Board for Vocational Education also advocated the analysis of enterprises into jobs as a method of teaching (111; 113). One of the practices advocated as a part of this enterprise analysis was that the teacher should involve the students in the process of analyzing the enterprise. In this manner it was believed that the students would develop the ability to consciously select, evaluate, and use facts in dealing with a

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[4]These rather formalized phases of teaching seem to be an adaptation of the formal steps in teaching advocated by followers of Herbart. This is the first bulletin reviewed to place such emphasis upon this method of teaching. In the same bulletin some emphasis was given to the learning being complete when the individual's ability reached the "level of the formation of efficient habits." The theory of habit formation as a part of teaching vocational agriculture was not developed by the author of the bulletin.

specific situation and also secure training in the selection, evaluation, and organization of content (113:1).

The project method of teaching in vocational agriculture was advocated by many but described by relatively few. In 1925 it was described by Lane in a rather concise manner and as a part of the job-analysis method.

> In applying the project method to vocational education in agriculture the instruction should be based on the requirements of farm enterprises, and farm jobs should be worked out under conditions as nearly normal to those found on local farms as is possible. As regards these activities and farm job problems, it is essential that (1) they should be real--that occurring in the life experience of the farm boys of the class; (2) they should be of sufficient importance to make the accomplishment or solution in each case an end in itself as well as a means of instruction; (3) they should serve as a means of connecting the home and school experience of the farm boys; (4) they should be so selected as to give the practical training and knowledge that will arouse interest and prepare the boys for the varied modern responsibilities of the management of a local farm; (5) they should be selected so that as nearly as possible all the processes, information, skill, and managerial ability necessary in the conducting of a local farm are exercised; and (6) the special objectives which are to be attained by the use of the project should be clearly defined in the mind of the teacher. (92:16-17)

Lane advocated the project as a method of helping the students develop abilities in farm enterprises important in the community and important to the students. He did not indicate <u>how</u> the teacher should conduct the classroom instruction so as to help the students solve the problems they faced in the conducting of their projects. One of the practices he advocated was that the teacher could

select farm job problems which he anticipated the students would face sometime during their farm experiences.

During this period the methods of teaching advocated underwent considerable change. Near the beginning of the period the use of surveys was probably the outstanding development. Later, the job analysis of farm enterprises somewhat replaced or supplemented the use of surveys. Also, there was a growing emphasis upon the value of the managerial kind of doing as well as the previously emphasized operative doing through practicums and projects.

Home projects and supervised practice in agriculture. It has already been noted that the Vocational Education Act in 1917 included a provision for directed or supervised practice in agriculture for at least six months each year. Supervised practice, primarily as home projects, was advocated in the 1911-1916 period and had become generally associated with programs of vocational agriculture. However, this provision in the Vocational Education Act became the basis for many recommended practices in the ensuing years.

During this period the Federal Board for Vocational Education issued three bulletins dealing primarily with the interpretation of the requirement for six months of supervised or directed practice (90; 96; 97). A comparison of these three bulletins, issued in 1918, 1923, and 1926, reveals several changes in the recommendations made to local

schools, although many recommendations remained basically the same. Table II on pages 73 to 76 shows a comparison of the three bulletins on several selected factors. Some generalizations made from the material in the table are as follows:

1. The term supervised practice was broadened from projects to include supplementary practices and later to include several kinds of supervised work experiences.
2. Practices recommended for supervision tended to shift to less direction and more supervision.
3. Student plans were to include both what was to be done and how it was to be done.
4. More emphasis was given to those practices which tended to lead to establishment in farming.
5. More emphasis was given to the importance of analyzing the records of supervised practice kept by the student.

Methods of correlating the classroom instruction and the supervised practice were discussed in each of these three bulletins. In 1918 the methods suggested for relating the classroom instruction to home projects were as follows:

> The phase of agriculture to be studied during a given year will usually determine the type of major projects to be selected by members of the class. The fact that there is to be practical work on projects should likewise determine to a large extent the arrangement of subject matter and school practicums during the year. Since the work on the home project must be seasonal, the study of the subject matter must likewise be made seasonal. . . . (90:15-16)

TABLE II

A COMPARISON OF THREE BULLETINS ON SUPERVISED PRACTICE IN AGRICULTURE

	1918	1923	1926
Title:	The Home Project as a Phase of Vocational Agricultural Education	Supervised Practice in Agriculture	Supervised Practice in Agriculture Including Home Projects
Content of supervised practical work:	Home projects and practicums; Projects classified as production, improvement, demonstration	Three parts: Project, improvement work, and supplementary work	Many kinds of supervised practice: Projects, farm jobs, job operations, cooperative enterprises, farm labor, and farm management
Method of supervision:	Frequent visits by teacher, explanations by boy of accomplishments since previous visit, careful observation for signs of disease, wrong practices, etc., discussion of plans for future, a written memorandum of any necessary instructions, reference readings, etc., given to the boy before leaving, consideration given to the project work when making grades for school records (Did not give any detail for evaluating)	Visits should be more than just checking the project, preliminary visits to be made for selection of project and preparation of plans, understanding to be developed on the part of the pupil rather than teacher dictation of what should be done, suggested score card be used in evaluating farm practice program (Did not recommend use of memorandum pads)	Preliminary visits to pupils' homes, individual instruction with emphasis upon developing understanding, student records and accounts checked, record of visits made for permanent file at school, visits made approximately one hour in length and as frequently as needed (one teacher cannot properly supervise more than 50 pupils), scorecards suggested with reservations for evaluating farm practice programs, recognition of individual situations for evaluation

TABLE II (continued)

	1918	1923	1926
Content of student plans for supervised practice:	Should include problems new to the pupil, an outline of methods to be used, and a seasonal sequence of things to be done	Set up the objective, give relation of project to agriculture of community and to the enterprises on home farm, show details of the project, prepared on a chronological basis, deal with production, financing, labor, storage, marketing, etc., give the approximate beginning and ending of the project work and the scope of the project	Set up the objective, give relation of project to agriculture of community and to the enterprises on home farm, develop by jobs and show operations to be performed and factors to be considered for managerial jobs, show details of the project, prepare on a chronological basis, deal with production, financing, labor, storage, marketing, etc., give the approximate beginning and ending of the project work and the scope of the project
Basic principles in conduct of directed or supervised practice:	(None listed directly. However, some were implied.)	Coordinate the supervised practice and the classroom instruction, plan for supervised practice to be continued from year to year, open a field for study of new problems, enable the student to secure experience in management, marketing, financing, record keeping, and manipulative skills, offer good prospects for financial returns, allow the student at the conclusion of his work to continue to other levels of accomplishment, lead the boy into actual farming	(Practically identical to the principles listed in 1923)

TABLE II (continued)

	1918	1923	1926
Factors for students to consider in selecting practices for supervision (supervised practice program):	Local conditions and personal interest of the student, main theme for instruction during that year, one enterprise	Home farm facilities available to the student, expected financial returns, personal likes and dislikes of the student, amount of time available to spend on the project, vital problems on the farm, opportunities for improvement in farming through seed, stock, etc.	(Same as for 1923 except for one additional factor: the farm occupation being prepared for)
Method of implementing supervised practice--student viewpoint:	Make a plan for the project, make an agreement between student, parent, and teacher, secure instruction during class and individual study time, keep detailed records of methods, time, expenses, receipts, etc., prepare a report including a story and a complete accounting for the entire project period	(Practically the same as for 1918 except for the following addition) Analyze the records at the end of the year to show scientific principles learned, improvements made, value of improvements, and financial summary	(Practically the same as for 1923)
Method of implementing supervised practice--teacher viewpoint:	Make preliminary visit to pupils' homes before time to select projects, relate supervised practice to their instruction for the year, spend some class time at beginning of school year to discuss purpose of projects and	(Practically the same as for 1918 except for the following additions) Determine most of actual course content from supervised practice selected by students, expect scope of supervised practice to require 270 hours or more	(Practically the same as for 1923)

TABLE II (continued)

	1918	1923	1926
	project opportunities with students, have students write plans, with some detail, before agreements are made, do not give stereotyped forms of study outlines to students, have students' project plans arranged under three headings: (a) what must be done, (b) what must be learned, and (c) what it is well to learn, have frequent individual conferences with student, have bulletins, books, etc., readily available for individual work, supervise project work as needed, keep a complete file in the school of all important features of projects	of time, check skills of individuals to see that students learn those operations in which they are deficient, use school contests, fairs, etc., to stimulate activities of students, use a score card for evaluating farm practice and make allowance for individual situations	
School credit for supervised practice:	Use man-hours of labor to determine scope of project and amount of credit for a particular project (No standards suggested)	Give school credit for supervised practice as part of total credit in agriculture rather than dividing the credit into two parts	(No specific mention of how to handle this matter)

The recommendations in 1923 were practically the same except more emphasis was to be placed upon the problems arising from the supervised practice. The practices for correlating the classroom instruction and the supervised practice given in the 1926 bulletin continued to be about the same as those in 1923 (96:18).

However, similar patterns of correlation were not always advocated or implied in other bulletins published by the Federal Board for Vocational Education during this period. In some, nearly all of the emphasis was placed on the classroom instruction, which was to be basis of exercises to be performed by the students (99; 100; 108). A bulletin issued in 1925 on methods of teaching vocational agriculture emphasized having the supervised practice determined from what was taught in the classroom rather than vice versa (122:36). During that same year, 1925, other bulletins describing the method of determining course content emphasized only the enterprise-analysis method and failed to mention the students' supervised practice programs.

Some disagreement and differences in emphasis were quite obvious. The bulletins and other publications for vocational agriculture by the U.S. Department of Agriculture clearly advocated the use by students of prepared project outlines in preparing the plans of their projects

(75; 83). However, none of the bulletins by the Federal Board for Vocational Education advocated the use of prepared outlines, and several of them recommended that such outlines not be used (90).

Agricultural subject matter--how determined. How to determine what should be taught in vocational agriculture was a popular topic during this period. Publications from the U.S. Department of Agriculture, the Federal Board for Vocational Education, the Bureau of Education, the National Society for Vocational Education, and articles in the Vocational Education Magazine gave suggestions to the local teacher. However, most of the suggestions seemed to be based on two of the provisions in the Vocational Education Act regarding agricultural education: (a) to fit for useful employment; and (b) to meet the needs of persons over 14 years of age who have entered upon or who are preparing to enter upon the work of the farm or of the farm home (106). These two conditions were usually interpreted only in terms of farming.

Practices advocated as methods of determining the agricultural subject matter at the close of this period were somewhat different from those at the beginning. In 1917 emphasis was placed on the use of prepared course outlines and the adaptation of the outlines to local situations through the use of surveys conducted by the students to determine

the local situations. Primarily, the content of the course of study was to be determined by the fundamental technical information known by experts in the various fields such as animal husbandry, field crops, and soils. Although some recommendations were given to adapt the course to needs and capacities of the students, the needs and capacities were primarily in terms of the science underlying agricultural practice (76; 77; 80; 81).

The next three years saw very few changes or additions to the recommendations of 1917. Teachers were urged to select the subject matter on a basis of needs and the community situation, but no specific methods of determining needs and community situations were given other than to use surveys (75; 89; 115). The most specific recommendations given were in a report in 1920 by a committee from the National Education Association (104). Seemingly the content for instruction was to be determined by what was known to be the elemental and basic portions of the science and art of agriculture found in the best farm practice. (Note: No indication was given as to who should determine this.) Flexibility was advocated in the agricultural courses so that they could be adapted to local conditions and needs, but some uniformity for sequence, nomenclature, and nature of the courses in all schools was desired.

Details were given in the report on how to adapt the courses to local conditions. In planning a course in farm

crops the teacher should consider (a) the local importance of the crop and the importance of the crop within the state, (b) the adaptability of the topic to secondary school conditions, (c) the status of knowledge about the topic, and (d) the seasonal organization of the material (104).

Another method of determining course content was introduced in 1921 and elaborated on during the remainder of this period. Bulletins issued by the Federal Board for Vocational Education advocated basing the content of instruction around the jobs on the farm (111). The jobs were to be classified into two groups: jobs of management and jobs of operation. Through the use of surveys, teachers were to determine practices used locally in the various enterprises and then to classify the jobs to be taught as either operative or managerial.

Job analysis with the enterprise as the unit was soon expanded by leaders in agricultural education. Occupational analyses were advocated (87; 94; 112) and many details were given for teachers to use in determining course content. The steps advocated for teachers to follow in using the occupational analysis as a method of determining the courses of study were:

1. Determine important farm enterprises of the community.
2. Divide these enterprises into job groups or problems (Enterprise: Corn production; job group: selection of the field).

3. Make detailed study of the enterprises on selected farms to determine the facts, principles, skills, and social abilities necessary for completion of the jobs (use questionnaire to get the detailed information).

4. Analyze skills and social abilities needed.

Gentry advocated occupational analysis as a method of deriving courses of study (87). This method was very similar to that just reported except that he gave more detailed practices to be used by the teachers. In adapting the course to the students he advocated that the teacher consider the age of the students, previous farm experiences, occupational aims, and their home farms (87:274-275). Several factors given to be considered when balancing the various parts of the course were: (a) the relative importance in the community of the enterprises, jobs and skills comprising the course, (b) the student's difficulty in acquiring the vocational competence, and (c) the amount and nature of the related technical knowledge to be given (87: 274).

Wheeler advocated that only actual problems which were to be solved by the students should be selected as the units about which the agricultural course should be organized. He emphasized that this meant actual farm-problems to be solved on the home farms of the individual members of the class. The problems were to be large enough to command the respect and interest of high-school boys, and at the

same time small enough for them to fully comprehend (120: 496-497). The uniqueness of this method lay in the selection of actual farm-problems from the home farms of the students in the class. His argument for this method can be partially understood from the following quotation.

> In the first place, the learning activities of pupils can most successfully be directed and controlled only when the pupils and teacher are working together, purposefully, toward the solution of a real problem. This is simply a statement of one of the most fundamental and widely accepted principles of good teaching, and cannot be overemphasized in this connection. (120:496)

Teachers were urged to consider the needs of the students as one basis of determining course content. Seldom were any details given as to just what was meant by needs. An exception to this was found in some suggestions by Wiseman for determining the content of the course. He recognized vocational, civic, physical and cultural needs but confined his recommendations to vocational needs. As a method of determining the needs of the students he suggested a continuous study of their (a) farm home backgrounds and activities, (b) social activities, and (c) abilities in performing jobs of the various enterprises (123).

A bulletin in 1925, dealing primarily with methods of teaching agriculture, advocated the use of farm job analysis in the selection and organization of teaching units. Teaching units[5] were to be selected after consider-

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[5]Teaching unit was defined as a portion of instruc-

ing all of the jobs in each enterprise in the course, and after determining the objectives for the course.

> The teacher's decisions as to teaching objectives should be based upon a consideration of the following factors: (1) The learner's present ability; (2) the learner's capacity; (3) the learner's immediate needs for training; (4) the learner's ultimate vocational objective; (5) teaching facilities; (6) the teacher's ability; (7) seasonal demands; (8) the economic importance of the job; (9) the learning difficulties; (10) the possibilities as to transfer of training; (11) other opportunities for training. (122:36)

The methods advocated, near the end of the period, for determining course content seemed to be based on three factors: The student, the farming in the community, and the relative importance of enterprises in specific farming vocations.

In general, the course content was to be based on the needs of the pupils to be taught and the specific requirements of the farming vocation selected (86). At the beginning of this period it was noted that most of the emphasis in course building was on the technical subject matter available with relatively little emphasis given to the abilities and needs of the student.

Agricultural subject matter--what should be taught each year. In the periods prior to 1917 rather definite

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tion which could be handled more or less independently of other portions and could be taught as one "teaching job."

sequences of courses had been advocated. Teachers were urged to start with a certain subject for the students in the 9th grade and follow a pattern of courses for the remaining years. During this period, 1917-1928, very little emphasis was given, in the materials reviewed, to a definite sequence of courses. Two related bulletins published in 1917 by the U.S. Department of Agriculture were exceptions, and they contained recommendations of some specific courses for southern secondary schools. The first year the students were to study soils and crops; the second, animal husbandry; the third, horticulture; and the fourth year was to be divided between two courses, rural engineering and farm management (76; 77).

A bulletin published in 1920 recommended specific courses for agriculture in secondary schools but also recommended that each school determine its own sequence of courses (104). However, it should be emphasized that these three bulletins represented a very small percentage of the total number of bulletins and other sources reviewed.

In 1925 the Federal Board for Vocational Education issued a bulletin on principles in making the vocational agricultural course of study. Because the bulletin was later revised and re-issued several times, it was considered as rather important. This bulletin contained recommendations for the course of study to be organized so as to

have a cross-section of the selected farm vocation (e.g., dairy farming) each year for the first three years. The fourth year was to include coordinating studies in management and operation techniques. For example, in a course designed for prospective dairy farmers, the study of dairy cattle would start in the first year and go on to the end of the third year. This would be accompanied each year by study of appropriate forage crops, cash crops, other animal enterprises, and construction and repair work. In the fourth year engineering and management problems of the entire dairy farm completed the course (86:11). For a course designed for first and second year pupils in one group, and third and fourth year pupils in another group, the recommended sequence of subject matter was to be as follows:

1st year--Dairy cattle (most of time), plus shop work, hay and pasture crops.

2nd year--Corn and corn silage; oats, legumes; cash crops such as potatoes, cabbage, beans; horses; farm pork supply; and shop work.

3rd year--Advanced dairy problem, farm-engineering problems, farm poultry, construction work, and home fruit supply.

4th year--Farm management, marketing problems, conservation, woodlot, and home gardens.

Perhaps the lack of emphasis to specific sequences of courses should be interpreted to mean that it was advocated that no specific sequence should be followed. However, the materials reviewed presented no positive evidence to support that conclusion.

Agricultural subject matter--specific subjects. The material just presented has shown that less emphasis was given to specific subjects to be taught each year in the program of vocational agriculture during this period than in the previous period 1911-1916. During 1917 many materials prepared by the U.S. Department of Agriculture contained technical subject matter recommended for instruction in secondary schools (76; 77; 78; 80; 81; 82; 83; 84). From 1918 through 1928, relatively few of the publications contained technical subject matter which was recommended for instruction in the vocational agricultural programs (75; 98; 99; 100; 104; 107; 108; 110; 113; 114; 115). The method of determining the content received much more emphasis than did the content itself. Several of the sources just cited seemed to give the technical content as a secondary purpose of the publication with the method of determining and organizing the content as the primary purpose (108; 110; 113; 114).

Agricultural subject matter--how organized. Although there were many ways of organizing subject matter, only one method was generally advocated at the beginning of this period. The biological and botanical classification of information seemed to dominate the methods of organizing subject matter, just as, as has already been noted, it dominated the method of determining the subject matter. Suggested

outlines for courses in soils and crops were organized so that the botanical and biological aspects were predominant (75; 76; 77; 78; 81; 83; 84). Suggestions for organizing material for teaching "judging of horses" included the recommendation that prior to actual judging, students should study the anatomy of horses (80).

Prepared project study outlines were advocated by some groups and disapproved by others. Some of those who advocated the use of prepared project study outlines recommended that the outline be organized on the same chronological sequence which was required for actual selection and implementation of the project (75). Others advocated that this seasonal sequence of topics should be the basic organization of all the subject matter as well as for the project study outlines (89; 90; 104).

In 1921 another method of organizing the subject matter was advocated. Teachers were urged to organize their subject matter according to enterprises, and within the enterprise to use the jobs as a basic for organization. Two kinds of jobs were recognized: managerial and operational (111). Within a year more emphasis was given to the farm job as the basis of teaching and the terms managerial and operational jobs were used less frequently.

Teachers were then urged to organize the subject matter on the basis of job groups. Each job group was to be divided into jobs and each job was to be considered as the teaching unit. For example, the job group of marketing

potatoes was to include the job of sorting and packing potatoes. The subject matter was to be organized according to the manipulative activities and technical knowledge required. The existing conditions and method of doing the job on the home farm were to be compared with the practices followed by successful potato growers in the community and the recommended improvements for the home farm were to be listed. Table III contains information taken from a bulletin describing the analysis of a potato enterprise (109:27).

Recommendations were given teachers to use occupational analysis as a method of organizing, as well as determining, course content. Some of the practices advocated for organizing the agricultural part of the curriculum by the occupational analysis method were as follows:

1. Important farming enterprises in the community which can be taught most effectively together should be grouped together, such as plant enterprises, into the same courses.

2. Farm shop work, diseases and insect pests of plants and animals, marketing, soils, climate, and the care and management of plants and animals should not be considered apart from the productive enterprises.

3. An outline job analysis should be prepared for each enterprise in the course, listing the jobs in chronological order beginning with jobs which are seasonal, when the course begins.

4. The standard of attainment expected of the students for each job should be determined.

5. The enterprises should be combined into a course having the most practicable seasonal sequence.

TABLE

SUGGESTED METHOD OF ORGANIZING SUBJECT OF A FARM ENTER-

Job Group VIII. Marketing potatoes. Job 4. Sorting and packing southern "new" potatoes	Existing home farm equipment and method of doing the job
Manipulative acticities: 1. Getting equipment ready for sorting	Manipulative activities 1. No equipment used
2. Passing potatoes over sizing apparatus	2. Activity not practiced
3. Hand picking damaged tubers	3. No careful attempt made to pick out damaged tubers
4. Packing containers	4. Field run tubers packed in second-hand sacks
Guides to technical knowledge: 1. Where to sort the potatoes	Technical knowledge content: 1. No sorting is practical
2. What kind of sorting equipment to use	2. No equipment is used
3. What containers to use (kinds, capacity)	3. Second-hand sacks used; sacks used varying in size
4. How many separations to make based upon the size of the tuber (U.S. Standard Grades)	4. No separations made
5. Where in the sorting process to handpick damaged tubers	5. Damaged tubers left in the field
6. How to get the potatoes into the containers	6. Tubers picked up in baskets then dumped into sacks in the field
7. How to close the containers	7. Sacks are sewed with twine

[6]The material in this table, except for the title, Enterprise.

III

MATTER THROUGH THE USE OF A JOB SURVEY
PRISE (109:27)[6]

Common practices of most successful potato growers of the community	Improvements in equipment and practices which are to be made in doing jobs on the individual's farm
Manipulative activities:	Manipulative activities:
1. No equipment used	1. Sizing machine to be put up in the field under temporary shelter
2. Activity not practiced	2. Potatoes to be dumped from baskets into sizer hopper
3. No careful attempt made to pick out damaged tubers	3. Damaged tubers to be handpicked
4. Field run tubers packed in barrels and covered with burlap	4. Tubers to be passed into barrels from sizer, barrels covered with burlap
Technical knowledge content:	Technical knowledge content:
1. No sorting is practical	1. Sort in field under temporary shelter
2. No equipment is used	2. Belt screen hand sizer
3. Cloth top stave barrels; capacity 3 bushels	3. Stave barrels covered with burlap; capacity 3 bushels
4. No separations made	4. Three sizes: No. 1, above 1 7/8 inches; No. 2, 1 1/2-1 7/8 inches; No. 3, marketable smaller tubers
5. Damaged tubers left in the field	5. Hand pick damaged tubers as they pass over sizer
6. Tubers dumped into barrels from baskets	6. Pass tubers into barrels from sizer
7. Cover top of barrel with burlap and bind with hoop	7. Cover barrels with burlap and bind with hoop

is reproduced from the bulletin entitled Analyzing a Potato

A pattern commonly advocated for organization of subject matter was much simpler than that just described. The subject matter for managerial-type jobs was to be organized into three columns: Decisions to be made, factors to be considered, and kind of information needed for applying the factors (108; 122). For operational-type jobs the subject matter was to be organized into three columns: Operations, standard practice, and related information (114; 122).

In 1925 the Federal Board for Vocational Education issued a bulletin on principles in making the vocational course of study. This bulletin, reissued in 1927 with practically no revision, has already been mentioned in the discussion of how to determine the course content. Two of the principles for course organization advocated were (a) organize the content around the major, contributory, and minor enterprises for the selected farming vocations, and (b) organize the four-year course so as to have a cross-section of the farm vocation in terms of major, minor, and contributory enterprises every year for the first three years. The fourth year should have coordinating studies in management and operation techniques (86:11). It may be noted that this is one of the first times a cross-sectional organization was advocated.

Farm shop instruction. We have already seen that prior to this period relatively little emphasis was given

to this phase of vocational agriculture. It is even questionable as to just what this phase of the vocational agriculture program should be called: Farm shop work, farm mechanics, farm engineering, or something else. During the years 1917-1928 no one term predominated, although farm engineering was used quite frequently.

First, we should recognize that although several bulletins, monographs, etc., contained material pertaining to "farm mechanics," these publications represented a small percentage of the total number issued by the groups being studied. Second, the lack of agreement in the use of terms describing the work may be significant in itself.

Farm mechanics work advocated in 1917 was sometimes described under the title Rural Engineering. As a one-semester course in the fourth year in high school it was to include the following areas: farm machinery, farm structures, farm sanitation, agricultural surveying, farm drainage, irrigation, terracing, roads, and rope work (77:22-30). For these nine areas a total of fifty-two lessons and thirty-six exercises were outlined. Twenty-four of the lessons and sixteen of the exercises were on farm machinery. Projects (group, individual, school, and home) were advocated as a part of the course, but no details were given as to how to correlate the projects, exercises, and lessons. This represents a broader concept of the content of the farm mechanics work than was advocated later in this period,

except for the recommendations of the N.E.A. Committee (104) in 1920.

The N.E.A. Committee report issued by the U.S. Bureau of Education contained recommendations for a one semester course in rural engineering. It was recommended that the course should include (a) farm machinery, power and equipment; (b) farm structures; (c) farm sanitation; (d) agricultural surveying; (e) farm drainage and irrigation; and (f) roads. Field and laboratory exercises were advocated as a part of the course.

> In connection with this course the students should have practice at the school in as much of the following work as time and equipment will allow: (a) Setting up, use, and repair of farm motors and machinery, (b) concrete construction, (c) planning farm structures, (d) construction of minor farm buildings, (e) construction of fences, gates, and other farm equipment, (f) installation of water, sewerage, and lighting systems, (g) elementary surveying, (h) laying out drainage and irrigation systems, (i) construction and use of terrace level and road drag, (j) belt lapping, harness repair, making knots and splices, and such handicraft work as may fit the needs of the students and the community and has not been provided in earlier courses. (104:19)

Farm mechanics work was sometimes described as primarily repair and construction work, the kind which arises on the farm (88; 107; 119). The repair work was to be in the areas of metal working, harness repairing, rope work, and belt lacing. In at least one instance (107) it was recommended that every boy in vocational agriculture learn how to do the following:

1. File a piece of metal to given dimension
2. Sharpen saws, auger bits, and hand tools
3. Thread bolts and tap nuts
4. Drill holes of given sizes at given points by using a drill and carpenter's brace, chain drill, breast drill, and hand drill press
5. Do light repair jobs by soldering
6. Repair harness and belts
7. Tie common knots and splice a hay-fork rope

During this period at least two different methods were advocated for organizing the work in farm mechanics. One method consisted essentially of a course in farm mechanics based on the repair and construction work of the farm. The other method consisted essentially of basing the farm shop work on the various jobs to be performed in the enterprises on the farm. This resembled an integration of the farm mechanics work with the classroom instruction (86; 87). In some instances part of the farm mechanics work was to be included in the regular classroom work with no mention of activities in a shop. For example, managerial jobs in planning a hog house for breeding stock were to be discussed from the viewpoint of management of the swine enterprise (112).

Others advocated arranging the farm shop work on a project basis rather than on the basis of a given material to be used. For example, the work of one year should not

be limited to wood, another to iron and steel, etc.; but, rather, the students should use the tools and materials needed for projects which might involve both wood and metal (119:47-48).

Several methods were advocated for determining the course content. One method advocated was to determine the content as a part of the occupational analysis for course planning. This meant determining the jobs of the various enterprises, and some of the jobs would be farm mechanics jobs. Another method advocated was to determine the content of a separate farm mechanics course by studying the practices used on successful farms and then basing the instruction on the ordinary repair and construction work which arises on the farm.

Methods of teaching farm mechanics were not given in detail during this period. In general, the methods advocated were based on the use of either exercises or projects. The exercises were usually not based on a particular need of the students on their home farms at that time. Supposedly, the projects advocated were based on some need at least from the home farm or other farms in the community.

> The farm equipment made, if it has not been made for a specific purpose at the school, should be such that the students may take it home and use it. As a rule, the making of models is not to be encouraged, when useful articles may be made. The home farms of the students and surrounding farms will furnish an abundance of equipment needing repair. Near-by im-

> plement dealers are often willing to furnish opportunity for study and practice in connection with farm machinery. (104:20)

Teachers were urged to use group projects as a method of teaching some things in farm mechanics. The group projects such as construction of farm buildings or laying out of a drainage system, might be at the school, upon neighboring farms, or upon the home farm of one of the students (104:19).

Just who should teach the farm mechanics was not specifically stated. It was recommended that the teacher have special training for the farm mechanics work, but it was not clear whether the teacher was to be the vocational agriculture teacher or some other teacher, although it seemed to be implied that the regular teacher of vocational agriculture should also be the teacher of farm mechanics.

Home projects and supervised practice have previously been discussed in detail. However, it should be noted here that recommendations were given to have supervised practice work include farm mechanics or shop jobs which were definitely related to the shop instruction at school (95).

Agricultural clubs. At a meeting in Kansas City, Missouri, in November, 1928, a national organization of students enrolled in vocational agriculture was formed, named the Future Farmers of America, commonly referred to

as the F.F.A. This organization was formed as an integral part of the program of vocational education in agriculture in the public school system. The developments from 1917 to 1928, which preceded the founding of the F.F.A., were reviewed to determine the practices advocated for promoting and developing agricultural clubs.

Agricultural clubs were advocated in 1917 as a part of the program for vocational agriculture in the high school. These clubs were for students having home projects and were to be directed primarily by the students. Regular meetings were to be held with the program at each meeting including such things as speeches by students, debates, and speakers from outside. No mention was made as to the time for the meetings (day or night), or for any other activities by the club (79).

Another kind of organization of vocational agriculture students was also advocated. Whereas the first was centered around production, this other was centered on marketing, purchasing, and some other services. Teachers were urged to teach marketing of farm products by having the students form a shipping association. This might be considered a forerunner of the present-day F.F.A. cooperatives and subsidiaries.

> Although the primary object of such an organization may be the marketing of the product of its members, its activities may be extended to the purchase

> of supplies, the production of plants, and such operations as spraying. (82:6)

Class and group projects for cooperative marketing of the students' products were advocated by others (95; 96; 97). Seemingly, such projects were to be a method of teaching cooperation. When such groups were formed, the cooperative was to be run as any commercial organization should be run. Officers were to be elected, responsibilities determined, a plan of activities for each individual made, and problems submitted to the entire group for decisions (97:12). There was no mention of social or leadership aims for such organizations, and development of leadership through such groups was advocated in relatively few of the publications (116:1039).

It was noted that throughout this period the publications issued by the Federal Board for Vocational Education contained practically no references to boys' clubs or agricultural clubs, either as a part of vocational agriculture or as a method of teaching some of the things in vocational agriculture.[7] The cooperative enterprises advocated in 1926 were essentially the only activities advocated

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[7]It is well known that leadership was given to the development of the Future Farmers of America organization by the staff of the Office of Vocational Education. The absence of leadership through publications issued by the Federal Board for Vocational Education or the U.S. Bureau of Education does not imply that no leadership was given from those sources. It does illustrate that the leadership was <u>not</u> exerted through official publications.

which resembled clubs. A review in a Federal Board bulletin of the development of student organizations from 1917 to 1927 neither advocated nor rejected the trends related (93:28-29).

Measuring and evaluating results in agricultural education. Determination of progress is usually expected in any educational program. It is usually taken for granted that tests of some kind will be given to determine the effectiveness of the teaching. However, during this period there were practically no systematic plans advocated for local schools to use when evaluating or measuring results in agricultural education.[8]

Evaluating results in supervised practice received some attention. Scorecards were advocated as a method of evaluating the achievements, but the scorecards were to be accompanied by special considerations for individual situations. Scorecards advocated in 1923 (96:26-27) and 1926 (97:36-37) are compared below.

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[8]National studies of the effectiveness of vocational education in agriculture were made by the Federal Board for Vocational Education in 1922 and 1927 (published in 1923 and 1928). Neither study contained recommendations regarding measuring and evaluating to be done by administrators or teachers for local programs of vocational agriculture (101; 102).

1923		1926	
Preliminary Plan	16%	Preliminary Plan Initiative Aim Completeness	16%
Execution Records	13%	Execution Records Completeness Neatness Accuracy	13%
Efficiency in performance	19%	Efficiency in performance Judgment System Punctuality	19%
Outcomes Economic income	10%	Outcomes Economic income Total net income Percentage of profit	10%
Skills	12%	Skills Skills developed (no.) Facility in performance (quality)	12%
Knowledge	15%	Knowledge New subject matter Social implications Related knowledge	15%
Attitudes	15%	Attitudes Interest in work Evidence of co-operation Interest in science	15%

The only difference between the two scorecards was the addition in 1926 of specific factors to consider under each of the headings. In neither year were any recommendations given as to who should be involved in doing the evaluating or just when it should be done.

Practicums and home projects were once advocated as a means of testing the classroom teaching. The home project, from the teacher's point of view, was to be considered a means of determining the effectiveness of the teaching. Likewise, the practicums were to be a means of testing the effectiveness of a part of the teaching.

> For example a practicum in selecting seed corn from the field may be used by the teacher to test the effectiveness of his teaching and at the same time to give the pupil skill and experience before he selects the seed for his own project. (91:60)

This practice of using the projects and practicums to test the teaching illustrates the general concept which seemed to have prevailed at that time. That is, the project and classroom work were quite distinct and the projects were merely requirements of the course, not a basis for instruction or part of the instruction.

In 1925 standard tests of agricultural information were advocated as a means of measuring results in vocational agriculture. Standard tests were available for poultry, vegetable gardening, and dairying. These were designated as National Agricultural Tests and their use was advocated as well as recommendations given for the preparation of additional tests (103:900). However, no recommendations were given as to when the tests should be given, who should give them, or whether additional testing should also be done.

In 1927 another recommendation appeared for evaluating the student's work. It was recommended that instead of

informational examinations more attention should be given to actual performance tests. A written project plan should be considered as one kind of a performance test on the instruction received (121:5).

During this period there was a general lack of information regarding practices advocated for measuring and evaluating results in agricultural education. Up to this point we can only conclude that either there was little concern for methods of measuring and evaluating results, or there was very little published by the leadership groups being studied. If they were concerned with measurement and evaluation their leadership was not exerted or evidenced through the publications.

1929-1940

The years 1929-1940 were the beginning years for the national organization of Future Farmers of America. This same period of years also included a great depression, drought, and the beginning of the hostilities for World War II. Their impact upon American agriculture, together with advances in farm mechanization and many other developments, provided the setting for this particular period.

Vocational education in agriculture during this period experienced a continued growth in numbers of students enrolled, number of departments, and in many other ways.

Objectives. The ultimate objective of vocational education in agriculture, as most frequently listed during this period, was to train present and prospective farmers for proficiency in farming (129:2; 138:101; 158:1; 165:68). The ultimate objective also was given as being to train persons who had entered upon or were preparing to enter upon the work of the farm for proficiency in specific farming operations (152:1; 153:2; 162:3). The emphasis in the objectives seemed to be in defining agriculture primarily as farming, and in directing the efforts of instruction to those either already in farming or preparing to enter farming.

Two publications issued during this period dealt primarily with the objectives of the program: Training Objectives in Vocational Education in Agriculture (158) was issued in 1931, and Educational Objectives in Vocational Agriculture (129) was issued in 1940. Several excerpts from these bulletins have been presented here to illustrate their similarities and differences.

1931	1940
Aim or Objective	
The primary aim of vocational education in agriculture is: to train present and prospective farmers for proficiency in farming. p.1	To train present and prospective farmers for proficiency in farming is the aim of vocational education in agriculture. p. 2

1931 (cont.)	1940 (cont.)
Sub-objectives	
The 12 contributory training objectives are: 1. To produce agricultural products efficiently. 2. To market agricultural products economically. 3. To select and purchase suitable farm equipment and supplies. 4. To cooperate intelligently in economic activities. 5. To manage the farm business effectively. 6. To establish and maintain a satisfactory farm home. 7. To perform appropriate economical farm-mechanics activities. 8. To participate in worthy rural civic and social activities. 9. To use scientific knowledge and procedure in a farming occupation (as contrasted with technical knowledge). 10. To exercise constructive leadership and to recognize and follow worthy leadership. 11. To grow vocationally. 12. To become established successfully in farming. p. 2	The major objectives of vocational education in agriculture are to develop effective ability to: 1. Make a beginning and advance in farming. 2. Produce farm commodities efficiently. 3. Market farm products advantageously. 4. Conserve soil and other natural resources. 5. Manage a farm business. 6. Maintain a favorable environment. The different abilities are needed by individuals in connection with farm jobs and activities in the solution of farm problems. p. 3
Note: These were followed by a rather comprehensive list of some abilities which might be developed under each contributory objective. There was recognition of overlapping.	Note: These were followed by a rather comprehensive list of contributory objectives for each of the six major objectives. There also were abilities to be developed.

1931 (cont.)	1940 (cont.)
Definition of Ability	
. . . the term, 'ability' as used in this report is practically synonymous with, or equivalent to teaching units organized on the farm job basis. In some cases, however, it is apparent that the ability deals simply with the development of an attitude or appreciation rather than doing ability on a farm job. p. 2-3	Note: The term "ability" was not defined in this publication.
Relationships	
. . . since the farmer's mode of living is so intimately connected with his means of livelihood, the program for vocational education in agriculture recognizes both a direct and a joint responsibility (with the public school system and other agencies) for training in appropriate rural civic and social activities. p. 1	Vocational education in agriculture is recognized and developed as a definite part of the program of public education. Therefore, a statement of the aims and objectives of this phase of vocational education must be in harmony with and support the general objectives and philosophy of the whole of public school education. p. 1

Although rather drastic editorial changes were made, the two publications contained practically the same basic objectives and sub-objectives for the local program. Seemingly, considerably less emphasis was given in 1940 to the cooperative activities and abilities than was the case in 1931. Farm mechanics was not recognized as a separate part

of the local program in 1940. However, more emphasis seemed to be placed in 1940 upon the abilities needed for leadership and for maintaining a favorable environment.

Some differences were quite apparent in the terminology used to describe objectives of the program during this period. Those differences may have represented different objectives or perhaps they were merely different ways used to express similar objectives.

The following are some examples of different statements of the objectives for vocational agriculture.

Example A.

> The aim of vocational instruction in agriculture as formulated in public policy is to fit for useful employment in agricultural pursuits. This may be interpreted to mean that the vocational course in the high school has two functions:
>
> 1. To prepare the pupil to meet with growing efficiency and happiness the demands of a progressive vocation of farming.
> 2. To meet the present and immediate agricultural needs of the pupil who lives on a farm. (127:1)

Example B.

> That it shall be designed to meet the needs of persons who have entered upon or who are preparing to enter upon the work of the farm.--Here again the implication is that we are, for the most part dealing with pupils living on farms who are directly interested in farm practice and who are eager to participate in it. (140:4)

Example C.

> The education shall be of less than college grade and shall be designed to meet the needs of persons over 14 years of age who have entered upon or who are preparing to enter upon the work of the farm or of the farm home. (134:6)

Example D.

The purpose of vocational education of secondary grade in agriculture is to train persons, who have entered upon, or who are preparing to enter upon the work of the farm, for proficiency in specific farming occupations. (152:1)

Example E.

The primary aim of vocational education in agriculture is: To train present and prospective farmers for proficiency in farming. (158:1)

Example F.

A course of study in vocational agriculture must prepare the student for efficient farming, intelligent participation in the affairs of the agricultural group, and permit him to function as a desirable American citizen. (130:25)

Example G.

In addition to training for the vocation of farming, we have a responsibility in training for rural leadership, cooperation, recreation and a high type of rural citizenship. (138:103)

A brief study of the seven examples revealed many implied differences in objectives. Example A stated that the aim for vocational agriculture should be to fit for useful employment in agricultural pursuits. Example B stated that vocational agriculture should be designed to meet the needs of those who have entered upon or are preparing to enter upon the work of the farm. Perhaps there is a difference between "employment in agricultural pursuits" and "the work of the farm."

In Example C the purpose given for vocational agriculture was to meet the needs of thos who have entered upon

the work of the farm or of the farm home. Perhaps the phrase "of the farm home" suggests even different objectives.

Examples D and E gave the objectives of vocational agriculture as proficiency in farming for those in or interested in the work of the farm. However, Example D gave the objective as being proficiency in specific farming occupations. Example E stated the objective as proficiency in farming. "Farming," in this case, might mean specialized or general farming, or farming as a general classification of several occupations.

Examples F and G seemed to imply rather narrow definitions of farming, since they specifically mentioned other objectives.

After reviewing all the publications from which these seven examples were selected one would conclude that different objectives were implied, but they may have been only implied. Undoubtedly the primary objective was for proficiency in farming, but either narrow or broad definitions of proficiency in farming could be assigned to particular statements of objectives.

In the summary for the objectives in the period 1917-1928 it was noted that the phrase "of the farm home" was frequently omitted from statements referring to the Vocational Education Act. From 1929-1940 the same situation

was found. The phrase was often omitted, and when included, it was not explained in the interpretations of the objectives.

The monograph titled Educational Objectives in Vocational Agriculture omitted the phrase "of the farm home" when referring to the National vocational education acts. The objective of developing the effective ability to maintain a favorable environment may have been intended to cover that phrase, or it may have been a broad interpretation of the phrase "of the farm."

> The farm home and the farm are so intimately tied together that the problems affecting one also have a direct influence on the other. The maintenance of desirable homes is recognized as being essential to proficiency in farming. Maintaining, improving, and enlarging upon the influence of the rural home are considered as being of paramount importance in the development of an agricultural program. (129:10)

Enrollment in vocational agriculture. Relatively little attention was given prior to 1910 to the specific question of who should take courses in agriculture. It has already been noted that from 1900-1910 it was assumed that the courses were primarily for students coming from farms, with no discrimination between boys and girls, and apparently no discrimination according to vocational interests. In general, it was not until the passage of the Vocational Education Act in 1917 that the vocational interest of the student was recommended as a major factor in determining who should be enrolled. Previously, it was more or less

assumed that the student would be preparing for farm work.

During this period of 1929-1940 there were widespread recommendations that the students enrolled in vocational agriculture should be those persons who had entered upon or were preparing to enter upon the work of the farm. The vocational objectives of persons enrolled in vocational agriculture, according to the seven examples on pages 105 and 106, were to be as follows:

1. Have entered upon or be preparing to enter upon the work of the farm.
2. Have entered upon or be preparing to enter upon the work of the farm or the farm home.
3. Present or prospective farmers.

It is possible that some differences were intended in who should be enrolled according to the above three statements. However, these three were generally interpreted in the publications as referring to students who had entered upon or were preparing to enter upon farming.

> That it shall be designed to meet the needs of persons who have entered upon or who are preparing to enter upon the work of the farm.--Here again the implication is that we are, for the most part, dealing with pupils living on farms who are directly interested in farm practice and who are eager to participate in it. (140:4)

A singleness of purpose for students enrolled in vocational agriculture during this period was quite evident. The emphasis was usually placed upon either what should be

taught or the teaching process, rather than who should be taught. Boys farming or preparing to farm were to be enrolled. Nothing was given regarding the enrollment of boys planning to go to an agricultural college, or planning to enter an occupation closely related to farming. Agriculture was defined as farming and so the singleness of purpose for enrollment was centered upon those boys farming or preparing to farm.

Content of high school programs of vocational agriculture. Content of programs of vocational agriculture recommended for local schools during this period was quite similar to that in the previous period. Classroom instruction and directed or supervised practice on home farms were to be definite parts of the program just as they were from 1917-1928. However, during this period from 1929-1940 farm shop instruction and the local chapters of Future Farmers of America were recommended as definite parts of the program. Near the end of the period placement of students was also advocated as a necessary part of local programs of vocational agriculture.

Supervised farm practice programs were to include one or more major cash enterprises, minor cash enterprises, and related and contributory enterprises and jobs including farm mechanics. These areas of the supervised farm practice programs could be compared to the project programs ad-

vocated during 1917-1929: productive projects, improvement projects, and supplementary farm practice work. Relatively little attention was given from 1929-1940 to recommendations for using school land for demonstrations and directed work in agriculture.

Some recommendations were given in 1929 regarding the coordination of vocational work with agricultural agencies in the area. A committee report (135) recommended that the teachers of vocational agriculture should not act as leaders of 4-H Club work.

One of the developments during this period was the growth of the Future Farmers of America movement. Recommendations were given for every school to have an F.F.A. chapter as a part of its program of vocational agriculture (139; 144; 147; 149; 155; 158; 166).

Some recommendations were given to include community leadership by the teacher as a definite part of the program. Among other things, it was recommended that the teacher help in programs of local farm, service, and civic organizations.

In general, it was advocated that the content of a local program of vocational agriculture for high school students should include classwork, supervised farm practice, farm mechanics, and a chapter of Future Farmers of America. Very few, if any, recommendations were given for

including an advisory committee as a part of the local program.

Vocational agriculture as a part of the high school program. The recommended patterns of time schedules established during the period 1917-1928 remained practically unchanged until about 1937. It was recommended that 50 per cent of the school time should be devoted to instruction in agriculture when the school had an agricultural curriculum of two or more years in length. This time was to include both the directed or supervised practice and the related class instruction. For the class instruction it was recommended that provision should be made for at least double-period units of school time (134).

The minimum time schedules recommended in 1937 were somewhat different. The revised Policy Bulletin No. 1 listed these requirements:

> While believing that the practice heretofore followed under which a minimum of five double periods of ninety minutes each, or 450 minutes a week, is necessary to a well-rounded course in vocational agriculture, the Office of Education, in recognition of the fact that many rural high schools are now organized on a sixty-minute basis, will approve State plans providing for not less than seven clock hours a week for such instruction. Where the period is less than sixty minutes minutes length, five double periods a week will be required. (156:45-46)

It was noted that the publications from the U.S. Office of Education, Vocational Division, were the only ones giving specific recommendations on time schedules. No determination was made as to whether the recommended time

schedules had unanimous support from national leadership groups, or whether those groups just failed to express opinions regarding how to make vocational agriculture a part of the total schedule for the school.

Some recommendations were given to encourage local school administrators to consider vocational education in agriculture as an integral part of their total program. Some change in wording, and perhaps emphasis, was given to this in the publications dealing with objectives published in 1931 and 1940.

1931	1940
. . . since the farmer's mode of living is so intimately connected with his means of livelihood, the program for vocational education in agriculture recognizes both a direct and a joint responsibility (with the public-school system and other agencies) for training in appropriate rural civic and social activities. (158:1)	Vocational education in agriculture is recognized and developed as a definite part of the program of public education. Therefore, a statement of the aims and objectives of this phase of vocational education must be in harmony with and support the general objectives and philosophy of the whole of public school education. (129:1)

It was recommended that when setting up a program of instruction in vocational agriculture careful consideration be given to three things: (a) the amount of time to be devoted to supervised farm practice activities by the students and teachers; (b) the amount of time allotted to the

student for training in vocational agriculture during his four years of high school work; and (c) the amount of time assigned to the teacher for instruction in vocational agriculture (137:36).

In general, there were fewer national groups giving recommendations regarding the scheduling of vocational agriculture during this period than in previous periods. The recommendations given tended to be of only one pattern. The seven clock-hour plan was advocated during this period as well as the double 45-minute period which had been advocated previously. No specific patterns for use of time during the day were recommended as was the case in 1917-1928.

Methods to use for teaching agriculture. It has been noted that during 1917-1928 job analysis of farm enterprises was one of the methods of teaching advocated. Also, there was a growing emphasis upon the values of both managerial and operative jobs as methods of teaching. During 1929-1940, emphasis was continued upon many of these same methods with some changes which were primarily deviations of the previous methods.

Methods of teaching which were advocated included (a) teaching through supervised practice, (b) using project records, (c) definite correlation of the supervised practice and the instruction in the classroom, (d) home visits,

(e) school contests, (f) job analysis, (g) field trips and laboratory work, (h) the pupil organization of Future Farmers of America, (i) local farm surveys, (j) real and hypothetical cases, (k) cooperative relationships with adult and other related organizations, (l) involvement of parents, and (m) involvement of students in planning and carrying out the instructional program.

Project records kept by students were to be used as a method of teaching. The records were to be the basis of current decisions on the projects rather than entirely for future planning. The teacher was to use the records to interpret how successful the pupil had been and to explain the reasons for the degree of success achieved (133:21,39).

In general, the conference procedure was advocated for use in conducting evening classes but not for teaching the high school students (163).

A bulletin dealing with methods of teaching vocational education in agriculture, issued by the Federal Board for Vocational Education in 1930 (165), was a revision of a bulletin first issued in 1925 (122). The 1930 issue was a major revision over the first issue, although many of the methods advocated were basically the same. The bulletin was divided into five parts: specific suggestions for teaching, examples of teaching and teaching material, details of the teaching process, description and classifica-

tion of methods and devices of instructing, and definitions of terms.

The terms used, such as farming occupation, type of farming, farm enterprise, farm job, and teaching unit, were all defined exactly the same as in the first bulletin, issued in 1925.

Some rules were given as guides in selecting teaching units. These methods of selecting units were as follows:

1. For training purposes, select jobs occurring in local enterprises.
2. Other things being equal, give first choice to jobs in the major enterprises.
3. Give preference to jobs which can be completely taught: that is, jobs on which instruction may be carried through the four steps of teaching, including supervision of practice and testing. This of course, requires correlation with the pupils' supervised farm-practice programs.
4. Give next choice to jobs which can be carried through the supervision of practice step at least, even though the final testing may have to be deferred, as in the case of some managerial jobs.
5. Include a limited number of jobs for training in study procedure as time permits and as prerequisite experience and ability of pupils make feasible.
6. Include units of related science directly supplementing actual farming situations which pupils have encountered. Live interest on the part of the pupil should be an important factor in determining the amount of time to devote to this type of teaching. Do not kill interest by information testing. Appreciation is the object of this study, and this is not measured by such tests.
7. Select operative jobs seasonally.
8. Teach managerial jobs when seasonal demands for operative work are not pressing and when the requisite working data are available. Antici-

pate such needs by maintaining a file of prices, costs, estimates, survey data, and the like.

9. With younger or less experienced pupils devote relatively more time to operative jobs.
10. With more mature and experienced pupils devote relatively more time to managerial jobs.
11. Teach some of the simpler managerial jobs within enterprises before teaching the more difficult managerial jobs dealing with the farm as a whole, but do not defer the latter until all enterprise jobs are taught.
12. Encourage considerable supplementary reading on the pupil's own time and initiative.
13. Do not waste time giving information tests, especially on related science. Test the ability to organize and use facts on a job situation.
14. Teach at least some jobs in which the pupil can attain mastery and develop job pride. (165:3)

The methods advocated for teaching operative jobs (165:5-7) have been summarized as follows:

1. Start with the job rather than with supervised study about the job.

2. Use a demonstration followed by an immediate opportunity for the students to participate in doing the job themselves. May need to use job instruction sheets.

3. Arrange for additional supervised practice.

4. Final testing should consist of determining how much the student has used of what he learned.

The methods advocated for teaching managerial jobs (165:7-8) have been summarized as follows:

1. Start with actual situations.

2. Develop interest approach through economic importance of the specific case selected.

3. Analyze into decisions-to-be-made and factors-to-be-considered.

4. Evaluate working data.

5. Give additional practice in managerial analysis with other cases.

6. Final testing should consist of checking the results of pupils' decisions actually carried out.

Many details were suggested for teachers to use in the preparation of lesson plans. The lesson plan given as an example contained the following major headings:

Enterprise
Farm Job
Situation
Objective
Teaching Procedure
  Preparation
  Presentation
  Supervision of practice
  Testing

In discussion of the instructional process much emphasis was given to the role of the teacher as a "salesman" and developer of "habits" (165:58-59). Five basic methods were advocated for securing pupil activity with some devices suggested for using each method (165:65).

Methods	Suggested Devices
1. Demonstrating (using actual things or cases)	A real farm job (actual working equipment and conditions, product used). A farm job demonstration at vocational speed. A farm job demonstration at slow speed. A piecemeal demonstration interspersed with other methods and devices. An actual case situation for a managerial job. A hypothetical case.

Methods	Suggested Devices
	A pseudo job (artificial working conditions, product not used). A laboratory demonstration for the purpose of illustrating scientific principles (related science).
2. Illustrating (using graphic representations)	Pictures, still or moving, black and white or colored, and the like. Diagrams showing essential parts, relationships, inner parts or connections, cross-sections, construction, composition, and the like. Graphs, charts, and tables showing amounts, comparisons, relationships, trends, and the like. A combination of the above illustrating devices together with verbal or telling devices.
3. Telling (using word pictures or symbols)	Lectures, statements, descriptions, books, bulletins, and reports. Instruction sheets. Job analysis. Speakers, radio, and the like. A combination with other devices.
4. Questioning (stimulating pupil self-expression)	Information questions. Yes-or-no questions (true or false). Questions stimulating thought, initiative, organization, etc. Examinations and tests. Assignments. Managerial analyses.

Methods	Suggested Devices
5. Directing (initiating and controlling pupil activity)	Assignments Supervised study Class discussion First-hand experience Trial-and-error experience Supervised practice Performance tests

The instructional process was described as being similar to the growing of a crop. The steps involved in crop growing were given as preparing the soil, planting the seed, caring for the growing crop, and measuring the yield and testing the quality. The steps in teaching were described as preparing the pupil's mind to learn, presenting the learning pattern, supervising pupil-practice, and testing the pupil's learning.

In 1925 a bulletin issued by the Federal Board for Vocational Education gave some specific details on the project method of teaching (92:16-17). A revision of that bulletin in 1930 contained the same recommendations regarding the project method for vocational education in agriculture (134:19).

Methods of teaching management of farm business advocated in 1930 were practically the same as in 1925. The following was taken from the bulletin revised and issued in 1930 but was practically the same as in the original bulletin issued in 1925.

> Since management as contrasted with operation is wholly mental, the primary elements of such work are the decisions to be made. It may be noted here that all jobs taught with a managerial-training objective may be defined in terms of a major decision, and that in most cases there are subordinate decisions into which the major decision may be analyzed. The major decision represents the job unit and is relatively independent in character, whereas the subordinate decisions are interrelated and mutually dependent. The making of a decision depends upon the ability to recognize and apply the factors bearing on the situation. (152:2)

Seemingly, during this period, the recommendations placed more emphasis upon the value of real farm jobs as a basis for teaching. It was not always clear as to whether the farm jobs were from student projects or merely farm jobs performed by many farmers. Sometimes the farm jobs were described as farm problems but the farm problems were never defined as real problems faced by the students while conducting their own supervised practice.

During the early thirties several publications were issued by the Federal Board for Vocational Education giving suggestions for teaching specific jobs. The method advocated was based on job analysis. The following suggestions were given for teaching the job of controlling black stem rust of small grains.

> A relatively small amount of time should be needed in the preparation step of the teaching in order to develop interest on the part of the pupils and give them a notion of what the job is about. As soon as possible the teacher should get the pupils out on field work to give them first-hand contact and practice on the job. The teacher should feel free at

> any time to answer questions in regard to related science, meaning of terms, and the like, but it is suggested that the more extended study of reference material be deferred in most cases until after the pupil has actually participated in doing the job according to the standard or accepted practice set forth in the analysis. (150:1)

From these suggestions it seemed that the particular farm job was advocated because of its general importance and not because it was recognized by the students as being important.

The suggested analysis was as follows:

Enterprise: Grain production (wheat, oats, barley, rye)
Job: Controlling black stem rust

Operations	Standard or accepted practice
(Six operations listed)	

The bulletin issued in 1931 on objectives in vocational agriculture contained some recommendations for providing training in suggested abilities. In general, the recommended methods included activities such as local farm surveys, interpretation of research data, case studies, individual and group projects, and contests (158). Some suggestions were included regarding methods of setting up teaching objectives.

> Again, the teacher should be cautioned against setting up his teaching units in general terms such as the job, "Feeding poultry." If we leave the objective in this form teachers, especially young ones, will teach feeding in general and are likely to rely quite heavily upon text and lecture material. Some of the specific abilities under this general ability of, "Feeding poultry", might be: (a) Ability to feed

> baby chicks the first 24 to 56 hours; (b) ability to feed chicks during the following two weeks; . . . (158:7)

After reviewing the activities suggested in that bulletin it seemed apparent that real activities were being described. However, there seemed to be a lack of primary concern for the abilities needed by the students; that is, the activities suggested were not necessarily for the solution of immediate problems of any one or more of the members of the class.

The monograph issued in 1940 dealing with educational objectives in vocational agriculture superseded the bulletin issued in 1931. In the later publication the importance of using real farming problems of the students in the teaching program was emphasized.

> In agricultural education programs the development of the abilities, therefore, depends upon individuals having real situations on the farm as a basis of developing sound judgment and clear-cut modes of action relative to standards of good farming. The attainment of the objectives requires that there be a definite relationship between the course of study and the supervised or directed farming programs of individuals. (129:3-4)

The last years of this period were quite significant for the greater emphasis placed upon involving individuals and groups as a method of teaching. Cooperation with related agencies such as the Soil Conservation Service was urged. Pearson gave some specific suggestions for involving the students and their parents in the program of vocational education in agriculture.

> Some activities which may be promoted and directed by a teacher of vocational agriculture to contribute to an improvement of parent-son-teacher relationships and understandings and to help make the program of vocational education in agriculture more effective are: (1) organizing discussion groups for parents of students; (2) encouraging parents to participate in general parent-education programs; (3) having special parent-visitation days in the agriculture department; (4) inviting parents to banquets, plays, F.F.A. meetings, and similar functions; (5) discussing relationship problems individually with parents; (6) encouraging family and home projects; and (7) having students consider farm and family problems when planning supervised farm practice programs and expenditures such as equipment, recreation, and livestock. (142:63)

During this period the student organization of Future Farmers of America was advocated quite frequently as a method of teaching.

Home projects and supervised practice in agriculture. Supervised practice in agriculture, including home projects, was definitely advocated as a method of implementing and developing agricultural education in public high schools. Many of the principles advocated for developing supervised practice were exactly the same as in 1926. Some differences were noted in the methods advocated for conducting supervised practice in 1926 (97) as compared to those advocated in 1930 (140). Table IV is organized similarly to Table II which was used to show differences and similarities evolved from 1917-1928.

TABLE IV

A COMPARISON OF TWO BULLETINS ON SUPERVISED PRACTICE IN AGRICULTURE (97; 140)

	1926	1930
Title:	Supervised Practice in Agriculture Including Home Projects	Supervised Practice in Agriculture Including Home Projects
Content of supervised practical work:	Many kinds of supervised practice: projects, farm jobs, job operations, cooperative practice, farm labor, and farm management.	Many kinds of supervised practice: farm enterprises as projects; supplementary farm practices; farm mechanics or farm-shop jobs; school plots; group, class, or cooperative projects; general farm work; and farm management.
Method of supervision:	Preliminary visits to pupil's homes, emphasize developing understanding during individual instruction, check records and accounts kept by student, make record of visits for permanent file at school, make visits approximately one hour in length and as frequently as needed (one teacher cannot properly supervise more than 50 pupils), use scorecards and recognize individual situations for evaluating farm practice programs.	Home visits to study the conditions at home, attitudes of parents, problems, etc.; visits for purposes of instruction and follow-up of previous instruction; visits made according to need as practices are taught seasonally; scorecards suggested as method of measuring pupil's proficiency.
Content of student plans for supervised practice:	Objective, relation of project to agriculture of community and to the enterprises on home farm, jobs and operations to be performed and factors to be considered for managerial jobs (should be worked out on a	Objectives, financial arrangements to be made, equipment to be purchased or rented, estimated returns and cost of the project, a budget, analysis of managerial decisions that are made, and definite state-

TABLE IV (continued)

	1926	1930
	chronological basis; deal with production, financing, labor, storage, marketing, etc.; give the approximate beginning and ending of the project work, and give the scope of the project).	ment of operations to be performed and standards of practice to be followed.
Basic principles in conduct of directed or supervised practice:	(Identical to those listed in 1923)	(Identical to those listed in 1923 and 1926)
Factors for students to consider in selecting practices for supervision (supervised practice):	(Practically same as in 1923) Home farm facilities available to the student; expected financial returns; personal likes and dislikes of the student as well as the amount of time available to spend on the project; importance of the problems on the farm; opportunities for improvement in farming through seed, stock, etc.; and farm occupation being prepared for.	Survey of farm giving soil, equipment, and facilities; kind of farm occupation being prepared for; expected financial returns; importance of the problems on the farm; opportunities for improvement on the farm; and time available.
Method of implementing supervised practice--student viewpoint:	(Practically same as for 1918 and 1923)	(Practically same as for 1918, 1923, and 1926)

TABLE IV (continued)

	1926	1930
Method of implementing supervised practice--teacher viewpoint:	(Practically same as for 1923)	(Practically same as for 1923 and 1926)
School credit for supervised practice:	(Practically same as 1923)	(Practically same as 1923 and 1925)
Characteristics of supervised farm practice program:	(Not listed as such in this bulletin)	Should include one or more major enterprises continued and developed throughout the time the student is in school; should include minor cash enterprises; should include related and contributory enterprises and jobs, including farm shop and engineering jobs; should be enterprises and jobs large enough to require use of regular farm equipment; should be of sufficient scope to provide adequate training for the development and proficiency in the kind of farming for which the student is in training; most of the work should be performed largely by the student; student should assume financial responsibility through ownership; should have carefully prepared plans in writing; should have complete and accurate records; should analyze and interpret records; should make new plans for coming year based upon experiences and interpretations of previous work.

Some generalizations made from the material in Table IV are as follows:

1. Correlation of supervised practice and instruction in the classroom was advocated. During this period teachers were urged to base the instruction upon both the nature of the farming in the community and the supervised work of the pupils, while the supervised practice program of the pupils was to grow out of both the farming situations of the community and the instruction given.

2. The method of providing time and supervision for student planning of supervised practices was exactly as advocated in 1926, i.e., as a part of the regular instruction time or during open periods which students had for conferences with the teacher.

3. School contests were advocated in 1930 as a means of stimulating interest in supervised practice work. However, there was no mention of using the student organization of Future Farmers of America as a means of stimulating interest in supervised practice.

4. The directed or supervised practice could be secured by working on the school farm under the immediate supervision of the teacher, on a farm other than the home or school farm under the direction of the teacher, and/or on the home farm under the supervision of the teacher. The first two methods were primarily for town boys or boys without facilities at home for supervised practice.

The supervised practical work for the boys living on farms could consist of an enterprise project and additional farm jobs such as treating seed potatoes for scab, testing milk, and grafting of fruit trees.

It was advocated that the teacher should help the student develop a long-time comprehensive program of farm practice. The program should be a cross section of the type of farming for which the student desired training and should include (a) at least one major cash enterprise started early in the student's career and continued and developed over several years, (b) one or more contributory

enterprises, (c) one or more minor cash enterprises, and (d) other units of farm practice including farm jobs not occurring in the regular project enterprises (167:6-7).

The method advocated for getting boys started on long-time programs of farm practice included work with the boys starting before formal school sessions started and continuing throughout the year and throughout succeeding years (167:8-9). The boy was to be assisted in making an early decision as to the type of farming for which he desired training.

It was suggested that the student should make a survey of his home farm to get basic information needed in developing his program of supervised farm practice.

> The formation of an effective program of supervised farm practice depends on a number of factors such as adaptation to the type of farming on the boy's home farm, the farming of the locality, parental cooperation, and working facilities, including equipment and capital. Therefore, it is important first of all to have the boy survey the home farm business and preserve the record of his findings as a basis for starting his long-time program . . . . (167:29)

The teachers were urged to have the students consider several factors when selecting the units of supervised farm practice. These have been summarized as follows:

Factors to be considered in selecting major farming enterprise

1. Type of farming and relative importance of major enterprise
2. Economic outlook
3. Facilities and equipment needed
4. Previous experience and kinds of experience required

Factors to be considered in selecting contributory enterprises

1. Major enterprises conducted
2. Need for feed, other supplies, etc.
3. Economic outlook
4. Labor available and previous experience needed

Factors to be considered in selecting minor cash enterprises

1. Economic outlook
2. Land, labor, and equipment available
3. Previous experience needed

Factors to be considered in selecting other units of supervised farm practice

1. Previous experience and need for operative and managerial experience
2. Need for improvement of farm, farmstead or farm home
3. Limitations of facilities

Teachers were urged to require careful study and thorough work in the classroom on project budgeting and planning. Individual students were to be encouraged to develop standards of practice (167:45,52). Both individual and group planning were to be used when helping students plan for supervised practice. Some suggested phases for project planning were as follows:

> In brief, the several phases of project planning are: (1) Selecting the project as a part of a long-time farming program; (2) blocking out the general plan with specifications as to estimates, size, and scope, how to start, prospects for development, and financial arrangements; (3) detailed planning by jobs; (4) modification of plans, if necessary, as the work develops; (5) checking, summarizing, and interpreting results; (6) replanning for next year. (167:59-60)

Teachers were also advised to have students revise project plans and supervised practice programs from year to year on the basis of interpretation of records and outlook material.

Recommendations were given regarding the content of project plans. The detailed project plan was to include:

1. Kind and size of enterprise and the accounting period.
2. Relationship of project to entire farming program.
3. Previous experience of student with the enterprise and kinds of experiences expected to secure.
4. Financial budget and details of necessary financial arrangements.
5. Job list with analysis of operations and accepted practices for all operative jobs.
6. Analysis of decisions-to-be-made and factors-to-be-considered for all managerial jobs together with conclusions reached.

Much of the emphasis in the supervised practice programs had been placed upon the so-called productive enterprises. In 1938 attention of teachers was called to this trend and they were urged to give greater emphasis to training in making the farm home more attractive, convenient, and livable. The bulletin, Landscaping the Farmstead, emphasized that ". . . the end product of vocational education in agriculture is a capable farmer-citizen, well established in his chosen occupation, and living in a comfortable farm home, with pleasant surroundings." (149:1)

Agricultural subject matter--how determined. During the years just preceding this period, farm job analysis was basic in the recommendations for determining and organizing teaching units. The needs of the pupils and the specific

requirements of the farming occupation for which the instruction was to be given were also to be fundamental considerations. During 1929-1940, very few changes were made in the recommendations for determining the subject matter, other than a greater emphasis upon correlation with the students' supervised practice programs.

During the first few years of this period some of the recommendations for determining course content centered upon two steps: (a) determine problems and practices of selected successful farmers of the region and the course content required for solution of those problems and use of the practices; and (b) determine from the pupils what knowledge, skills, and attitudes they possess for solution of those problems and application of the practices. Recommendations made by some others were that the content of instruction should be based upon both the nature of the farming in the community and the supervised practice programs of the students.

Some detailed rules for selecting teaching units were included in a bulletin entitled Methods of Teaching as Applied to Vocational Education in Agriculture (165). These rules included the following:

1. Select jobs occurring in local enterprises and give priority to jobs in major enterprises.
2. Give preference to jobs which can be correlated with students' supervised practice programs.

3. Include some jobs for training in study procedure.

4. Include units of related science which directly supplement actual farming situations encountered by pupils.

5. Select operative jobs seasonally.

6. Teach managerial jobs when seasonal demands for operative jobs are not pressing and when necessary instructional information is available.

7. Devote relatively more time to operative jobs with the younger and less experienced students, and relatively more time to managerial jobs with more mature and experienced students.

8. Teach some of the simpler managerial jobs within enterprises before teaching the more difficult managerial jobs dealing with the farm as a whole.

The enterprise analysis procedure was recommended as a method of determing content as well as a method of teaching. Several bulletins, such as Analysis of the Management of a Corn-Growing Enterprise (153), were prepared as examples of enterprise analysis for teachers to use. Such analyses were made for both operative and managerial jobs of various enterprises on practically the same basis as in the previous period of 1917-1928.

Several factors recommended to teachers for use in selecting appropriate materials of instruction, included:

1. The educational and vocational status of persons to be educated

2. The availability of materials for instruction, including students' farming programs

3. The amount of time available for instruction

4. The teacher's knowledge and ability

5. The seasonalness of materials available

"Monograph No. 21" published in 1940 described educational objectives in vocational agriculture but also included some clear-cut statements dealing with methods of selecting content for the instructional program. It was recommended that a definite relationship should exist between the course of study and the supervised or directed farming programs of individuals. Direct reference to supervised practice programs was not made in the 1931 publication dealing with objectives (158). Other references were made in the 1940 publication to the need for a close correlation between the students' farming activities and the instructional program.

> Since vocational education in agriculture is to be concerned with the development of effective abilities, such education must be concerned with discovering the problems with which students are confronted in the development of their proficiency in farming. . . . In the development of the educational program provision should be made for participation in farming activities by the students. Enterprise standards and agricultural objectives should be formulated and used as a basis for the selection of teaching materials. (129:13)

In the recommendations throughout this period there was an increasing emphasis placed upon the farming programs of the students as a basis for determining the course content. An A.V.A. committee report published by the Office of Education (157) advocated close correlation between the supervised practice programs and the instructional program.

Agricultural subject matter--what should be taught each year. The trend away-from recommending specific subject matter for particular years was continued during this period. The cross-sectional method of organizing the teaching program was re-emphasized in two revisions (1929 and 1934) of the bulletin on principles in making the vocational course of study (124; 128). Other bulletins in the first part of this period also carried recommendations for distribution of the jobs to be taught over the four years of work. The following is an example of a four-year plan of work for a New Hampshire school (167:2).

Enterprise	Number of double periods				
	Class Year I	Class Year II	Class Year III	Class Year IV	Total
Dairying	30	35	25	15	105
Poultry	30	25	25	10	90
Forage Crops	10	10	--	--	20
Silage Corn	5	5	--	--	10
Potatoes	15	10	--	--	25
Apples	15	15	20	15	65
Small Fruits	10	5	10	--	25
Vegetable Gardening	5	10	--	--	15
Farm Engineering	--	--	30	--	30
Bee-keeping	--	10	10	--	20
Forestry	10	--	10	--	20
Swine	--	5	--	--	5
Farm Management	--	--	--	90	90
Farm Shop	50	50	50	50	200
Total	180	180	180	180	720

During this period more recommendations were given regarding the process of how to determine what to teach and fewer recommendations on what to teach than in previous years. Most of the recommendations were for the content of instruction to be based on jobs for developing the student's ability to do. However, several bulletins and leaflets issued dealt primarily with what was stated to be reliable subject matter for teachers to use in teaching certain things.

Subject matter areas analyzed into jobs and published for teachers to use included management of cotton-growing enterprise (154; 161), management of a farm business (152), management of a corn-growing enterprise (153; 160), controlling black stem rust of small grains (148; 150), special jobs in quality milk production (145; 159), special jobs in farm forestry (146; 147), farm credit (131), operative jobs of a corn-growing enterprise (162), landscaping the farmstead (149), conserving farm lands (126), and building electrical equipment for the farm (151). These bulletins and leaflets, and others reviewed, contained very few, if any, recommendations for teaching certain jobs in specific classes. It was also evident that the recommended content was broader than productive agriculture. For example, teachers were urged to have local public speaking contests and to give instruction in the value of

participation in the activities of farmer and community organizations.

Agricultural subject matter--specific subjects. During the period of 1911-1916 the recommended instructional areas tended to be very similar to the collegiate organizations of technical agriculture: animal husbandry, soils, dairy science, and farm crops. However, during the period 1929-1940 recommended instructional areas tended to be dominated by the enterprise-analysis-method with emphasis placed upon the development of abilities. The instructional areas were to include such things as cooperation, rural leadership, farm credit, landscaping and land conservation as well as productive enterprises such as corn, cotton, and dairy.

Agricultural subject matter--how organized. It has been noted in review of practices for previous periods that the recommended ways of organizing subject matter have undergone considerable change. The biological and botanical classification of information gave way to the chronological sequence of subject matter presented on a seasonal basis. This was followed, in the early twenties, by recommendations that teachers still use the seasonal sequence but organize the subject matter according to enterprises and within the enterprise use the jobs as a basis for organization. Jobs were to be classified as either managerial or

operational. In 1925 emphasis was given to the cross-sectional method of organizing the subject matter for the four-year course.

Throughout this period 1929-1940 there was practically no change in the recommended practices for organizing the subject matter when compared to the practices advocated in the late twenties. The cross-sectional method received additional emphasis as the method to use for organizing the course. The bulletin, Principles in Making the Vocational Course of Study in Agriculture in the High School (127;128), was reissued twice during this period, each time with practically no changes. (Originally issued in 1925, reissued in 1927.) It recommended that teachers organize the four-year course so as to have a cross section of the farm vocation in terms of major, minor, and contributory enterprises every year for the first three years. The fourth year should have co-ordinating studies in management and operation techniques. The following quotation is taken from that bulletin.

> For example, in a course designed for prospective dairy farmers the study of dairy cattle, herd management, care of milk, etc., would start in the first year and go on continuously to the end of the third, accompanied in each year by study of appropriate forage crop, cash crop, or animal enterprises with accompanying construction and repair work in succession over the three years. In the last year engineering and management problems of the dairy farm as a whole would cap the course. (127:11)

In addition to the cross sectional method of organizing the subject matter some recommendations were given for the teachers to organize the information to be taught each year according to the needs of the students as their farming programs were developed (167:2).

Farm Shop Instruction. The practices advocated during this period for the development of farm shop instruction were practically the same as those in the years 1917-1928. However, there may have been even less attention given in the publications to the farm mechanics work. Certainly there was no more attention devoted to it than in the period 1917-1928.

Terminology describing this phase of vocational agriculture during this period was "Farm shop," "shop work," "farm engineering," and "farm mechanics." Sometimes the work was referred to as a course in farm shop or farm mechanics, and at other times it was mentioned as farm shop or farm mechanics activities.

None of the publications reviewed for this period gave detailed descriptions of the kinds of activities to be included in farm mechanics such as were given in the period 1917-1928. Articles by individuals, such as L. M. Roehl, were quite numerous and they did give details, such as the kinds of skills which should be developed by students depending upon the tools commonly used farming occupations (143).

A change in philosophy during this period regarding the farm mechanics work was apparent in the publications dealing with objectives for vocational agriculture and also in the bulletins dealing with organization and administration of agricultural education. In 1931 the seventh of twelve contributory objectives was stated as being "to perform appropriate economical farm-mechanics activities." The revised publication in 1940 did not single out farm mechanics as a special objective. The six major objectives given were somewhat parallel to the twelve contributory objectives listed in 1931 but farm mechanics was not mentioned as a separate objective in 1940.

The bulletin on organization and administration of agricultural education in 1930 included "shop and engineering" as a part of the agricultural curriculum. However, farm shop instruction was not necessarily a required part of the program: "A separate room for farm shop is necessary when this work is given." (134:15) (Underlining not in original.)

This statement was the same as appeared in an earlier bulletin issued in 1925. However, in a revised bulletin issued in 1939 the language was stronger and implied that shop instruction was a definite part of the program: "Facilities should be furnished for classroom, library, laboratory, and farm shop activities." (137:33)

Changes in the recommended practices during this period as compared to previous periods were not clear-cut. Near the end of this period teachers were urged to consider farm mechanics as a definite part of a program of vocational agriculture. The teachers were not urged to have separate farm shop or farm mechanics courses, but neither were they urged to integrate the farm mechanics work into the entire program.

Agricultural clubs--the Future Farmers of America. The Future Farmers of America was organized in November, 1928, after many years of gradual development. We have noted that agricultural clubs were advocated by some in 1917 as a part of the program for vocational agriculture in the high school, but very little leadership was given through official publications.

During the period 1929-1940 some leadership was given through publications by the national groups included in this study. Publications issued by the Federal Board for Vocational Education (after 1930 through the U.S. Office of Education) contained recommended practices for local teachers regarding the local chapters of Future Farmers of America, the state associations, and the national organization. However, some of the most detailed and specific recommendations regarding the objectives of the new organization of students enrolled in vocational agriculture were in publi-

cations other than those from the Federal Board for Vocational Education or the U.S. Office of Education.

The national organization of New Farmers of America (N.F.A.) was completed in 1935. It was an organization for Negro boys enrolled in vocational agriculture and was very similar to the organization of Future Farmers of America (F.F.A.)[9]

Walter Newman, supervisor of agricultural education for Virginia, summarized materials received from forty state supervisors and advocated that the following things be accomplished in vocational agriculture by the chapters:

1. Better training in public speaking and parliamentary procedure.
2. Developing of initiative, sense of responsibility and leadership on the part of members.
3. In many cases they have developed a fine spirit and morale among the boys and their attitude towards farming. . . .
4. Splendid training in cooperative effort through participation in social and recreational functions; staging community fairs; purchasing supplies and selling produce cooperatively; raising funds; developing community programs, etc.
5. Establishing habits of thrift and wise investment.
6. Assisting in enrolling members for part-time and evening classes.
7. Securing increased publicity for the local department of vocational agriculture. (141:11)

These seven purposes were quite different from the nine objectives and purposes as set forth at the first of-

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[9]Hereafter, the term Future Farmers of America (F.F.A.) will be used to refer to both organizations.

ficial meeting in Kansas City, Missouri, in 1928.

1. To promote vocational education in agriculture in the public schools of the United States.
2. To create more interest in the intelligent choice of farming occupations.
3. To create and nurture a love of country life.
4. To encourage recreational and educational activities for students in vocational agriculture.
5. To promote thrift.
6. To strengthen the confidence of the farm boy in himself and his work.
7. To encourage cooperative effort among students of vocational agriculture.
8. To promote scholarship among students of vocational agriculture.
9. To develop rural leadership. (125:952)

One of the first instances of a representative of the U.S. Office of Education advocating practices for local F.F.A. chapters was by Spanton in 1930. He advocated developing rural leadership through local, state, regional, and national public speaking contests (155).

Some specific recommendations were given regarding methods of developing successful local chapters of Future Farmers of America. Teachers were urged to remember that the organization was a boys' organization and that definite programs of work were essential to the success of the chapter. Teachers were encouraged by W. A. Ross to use a form such as follows for setting up the program of work (144).

Item	Goal	Ways and Means	Accomplishment

In 1934 some specific recommendations were given for the local adviser in establishing and promoting the F.F.A. Some specific methods of establishing a chapter were outlined by A. P. Williams as duties of the local F.F.A. adviser.

1. Present facts about the F.F.A. to the boys in the vocational agricultural classes.
2. Get in touch, by visits or through correspondence, with other teachers who have been responsible for the organization of a successful chapter.
3. Have members from other chapters come to the school to talk to local vocational agriculture boys about the F.F.A. and what they have accomplished.
4. Talk with some of the leaders among the vocational agriculture boys concerning the advisability of organizing a chapter. Give these boys copies of the Manual to read.
5. Arrange for one or more boys to attend district or state F.F.A. meetings to hear programs and report back to the other boys.
6. Discuss with the boys the different types of activities in which they may look forward to engage in order to carry out the purposes of the organization and secure its benefits.
7. Make application to the State Association for a chapter charter. (164:143)

Apparently there was a manual available describing the Future Farmers of America, but the manual was not published by any of the organizations or agencies included in this study. The extent to which national leaders participated in writing the manual or serving as consultants for its preparation was not determined.

The revisions during this period of the Federal bulletin titled Agricultural Education: Organization and Ad-

ministration provided an interesting series regarding the place of the F.F.A. as a part of the job of the teacher of agriculture. The bulletin issued in 1930 (134) and the earlier issues did not mention the F.F.A. The 1939 issue (137) stated that one of the responsibilities of the teacher of vocational agriculture was to establish a local chapter of Future Farmers of America for all day students.

In 1938 J. A. Linke advocated that the teacher's job included a responsibility in training for rural leadership, co-operation, recreation and citizenship.

> In addition to training for the vocation of farming, we have a responsibility in training for rural leadership, cooperation, recreation, and a high type of rural citizenship. This opportunity came through the organization known as the Future Farmers of America. There are so many good things coming to the farm boys who belong to the F.F.A. that it certainly calls for a further development of this organization. (138:103)

The distinction made between training for the vocation of farming and rural leadership, co-operation, recreation, and citizenship was not clarified. It may have referred to the concept of the F.F.A. as an extra-curricular organization rather than as an integral part of the school program. However, none of the literature reviewed for this period stated whether the F.F.A. should be developed as an extra- or intra-curricular organization.

Since the F.F.A. was advocated as a part of the vocational agricultural program during this period, it might

be assumed that some recommendations were given to the teachers regarding the content of the F.F.A. program. We have already noted that activities were suggested to promote thrift. Teachers were urged to suggest to the F.F.A. chapter that such activities as the following be a part of their program of work:

a. Control black stem rust of small grain through location and eradication of barberry bushes

b. Conduct local public speaking contest

c. Organize local co-operative

d. Conduct community service projects for improving farmsteads by landscaping

As a method of developing the program of the F.F.A. it was advocated that the program of the F.F.A. be correlated with the programs of other boy organizations in the high school (157:10).

Measuring and evaluating results in agricultural education. The lack of systematic plans for measuring and evaluating results in agricultural education had characterized practices advocated in the previous periods. Some practices were advocated regarding measurement and evaluation of the supervised practice programs as well as a few practices for isolated parts of the classroom instruction. This period of 1929-1940 saw considerably more leadership given through publications by national leaders for measuring and evaluating results in agricultural education.

Evaluating results in supervised practice received some attention in the period 1917-1928. The use of scorecards was recommended, within certain limitations. In the 1930 issue of the bulletin on supervised practice similar recommendations were made regarding the use of scorecards. The scorecard used for American Farmer candidates was presented as an example of the kinds of things to be considered on a scorecard. Table V contains a comparison of the scorecard given in 1926 (97) and in 1930 (140) in bulletins issued by the Federal Board for Vocational Education.

The scorecard for the American Farmer candidates included several elements besides the supervised farming activities. However, it was recommended that when measuring and evaluating the proficiency of the individual student in performing farm practice recognition should be made of individual opportunities, limitations, and other factors.

In 1930 the bulletin dealing with supervised farm practice contained recommendations regarding five things which were to be considered by the teacher when grading the student's work: (a) plans developed by the student, (b) execution of plans, (c) skill in performing the work, (d) accuracy and completeness of records of activities and financial transactions, and (e) analysis made of the records (140:45).

TABLE V

A COMPARISON OF SCORECARDS FOR EVALUATING INDIVIDUAL SUPERVISED PRACTICE PROGRAMS

Taken from bulletins published in 1926 (97) and 1930 (140)

1926		1930		
				Points
Preliminary Plan	16%	I. Farming status		30
Initiative		A. Managerial responsibility (not more than 10)		10
Aim		1. Owner--livestock	(10)	
Completeness		2. Partner--livestock	(7)	
Execution	13%	3. Renter--livestock	(5)	
Records		B. Kind and scope of farming activities		20
Neatness		1. No., kind, and scope of farm enterprises	(15)	
Accuracy		2. Equipment	(5)	
Efficiency in performance	19%	3. Working capital	(5)	
Judgment		II. Ability to farm		40
System		A. Efficiency in home projects	(15)	
Punctuality		B. Efficiency in other supervised practice and supplementary farm jobs	(5)	
Outcomes		C. Investments in farming	(5)	
Economic income	10%	D. Evidence of successful farm management	(15)	
Total net income		III. Ability to work with others		10
Percentage of profit		IV. Leadership		10
Skills	12%	V. Scholarship		10
Skills developed (no.)		Total		100
Facility in performance (quality)				
Knowledge	15%			
New subject matter				
Social implications				
Related knowledge				
Attitudes	15%			
Interest in work				
Evidence of cooperation				
Interest in science				
Total	100%			

During this period there was a growing emphasis upon the use of changes in agricultural practices as one measure of effectiveness of programs of vocational agriculture. Near the end of the period the emphasis was placed even more specifically upon measuring the advancement of students and former students toward establishment in farming.

Some specific practices were advocated for teachers to use: Teachers should not waste time giving information tests, especially on the related science included in the teaching; teachers should test the ability of the students to organize and use facts on a job situation; final testing on operative jobs taught should consist of determining how much the student had used of what he learned; testing on managerial jobs taught should consist of checking the results of the pupil's decisions actually carried out (165:3, 5-8). However, in these recommendations for performance-testing no details were given for involving students or parents in the evaluation. Emphasis was placed upon the teacher in the testing role and, apparently, in the role to evaluate the results of testing.

The recommendations for using changes in agricultural practices as a measure of the effectiveness of the teaching were illustrated by the following material on follow-up of instruction in quality milk production.

> Some sort of follow up on the training given is extremely important. The efficiency of the instruction

may thus be measured to a certain degree. This record of results may be in the form of--

1. Improved practices occurring in the supervised practice programs of pupils.
2. Improved practices adopted on the home farm of pupils.
3. Improved practices adopted by farmers in the community.
4. Improved quality in milk and cream delivered to stations as indicated by reports of milk-plant operators, managers of dairy-product plants, and reports of boards of health. (159:2)

In 1933 the third national study of the effectiveness of vocational education in agriculture was published (136). The recommendations for local departments as a result of the study were different than for the previous studies. It was recommended at this time (and not in the previous bulletins) that a continuous follow-up of the occupations of former students was a necessity in every high school having an agriculture department. The practices of follow-up were re-emphasized in the following years.

Near the end of this period the teachers were urged to measure the results of the instruction program in terms of placement and achievement of their students. Placement in farming was recommended by R. W. Gregory as being a method of measuring the effectiveness of instruction.

> Workers in vocational education in agriculture must come to accept the final achievement of getting into farming on the part of boy and young man students wanting to farm as the best criterion for measuring the worth of their problems of instruction. (132: 193)

It can be concluded that during this period, as compared to previous periods, the leadership groups being studied exerted more leadership through publications in practices for measurement and evaluation. Also, there were no indications of practices having been advocated for the teacher to involve his students and/or others in either the measurement or the evaluation of accomplishments.

1941-1954

These years included World War II, the Korean Conflict, agricultural surpluses, increasing birth rates, increased enrollments in educational programs, and many other factors affecting both the agricultural and educational situations in the United States.

Vocational education in agriculture continued to grow during this period, except during the years of World War II. The growth in numbers of students enrolled and numbers of school with programs is shown in Table VI. The growth has been shown for the years which correspond to the periods for this study since passage of the Vocational Education Act in 1917.

During 1941-1954 the amount of materials published concerning agricultural education by the leadership groups, organizations, and agencies studied seemed to be signifi-

TABLE VI

SELECTED DATA ON GROWTH OF FEDERALLY REIMBURSED PROGRAMS OF VOCATIONAL AGRICULTURE[10]

Factor	Year			
	1917-1918	1928-1929	1940-1941	1954-1955
Number of schools with Federally reimbursed all-day classes	609	3,788	8,786	10,067
Number of students enrolled in Federally aided all-day classes	15,450	106,111	332,612	456,964*

*Includes enrollment in day-unit classes

[10]Data taken from Thirteenth Annual Report of the Federal Board for Vocational Education (184) and Digests of Annual Reports of State Boards for Vocational Education to the U.S. Office of Education, Vocational Division (170; 171).

cantly less than in previous periods. Information in Table VII illustrates this observation.

The total number of publications dealing with agricultural education issued by the U.S. Office of Education, Federal Board for Vocational Education, and National Education Association has tended to decrease since 1940. That probably represented a decrease in the relative amount of time and effort devoted to the use of publications as a means of exerting leadership. However, from only this evidence, the conclusion should not be drawn that the respective groups exerted less leadership in the field of agricultural education.

Objectives. The famous Monograph No. 21, Educational Objectives in Vocational Agriculture, was published in 1940. There was no revision of the publication during this period. It can be assumed that at least for most of the period it was the official guide for objectives from the U.S. Office of Education.

A committee to study postwar problems in vocational education reported in 1945 that "establishment in farming is a primary objective of vocational agriculture." (185: 155) No other objectives, primary or secondary, were given. Other recommended practices quite clearly stated that to be efficient these programs of agricultural education should be made up of farm boys interested in farming and

TABLE VII

SELECTED SOURCES OF INFORMATION FOR PRACTICES ADVOCATED BY NATIONAL LEADERSHIP GROUPS, ORGANIZATIONS, AND AGENCIES

Source	Years					
	Before 1900	1900-1910	1911-1916	1917-1928	1929-1940	1941-1954
Annual Reports, Commissioner of Education						
Number of pages, approx.	461	128	504	36	31	24
U.S. Office of Education						
Number of bulletins	0	2	26	18	9	0
Federal Board for Vocational Education and/or U.S. Office of Education, Vocational Division:						
Number of bulletins	0	0	0	40	38	14
Number of monographs	0	0	0	4	16	1
Number of leaflets	0	0	0	0	6	0
National Education Association Proceedings and Addresses						
Number of pages, approx.	9	354	298	359	24	0

with opportunities for farming programs of such scope as to contribute to establishment in farming.

The policy bulletin for administration of vocational education , revised in 1948, reaffirmed the primary purpose and six major objectives of vocational agriculture which had been stated in Monograph No. 21 in 1940. This revised policy bulletin did give a slightly different interpretation to the statement from the Federal Vocational Education Act (1917) regarding the purpose of agricultural education. The three statements were as follows:

Federal Vocational Education Act (1917)

> ". . . designed to meet the needs of persons over fourteen years of age who are preparing to enter upon the work of the farm or of the farm home."

Educational Objectives in Vocational Agriculture (1940)

> ". . . designed to meet the needs of persons over fourteen years of age who have entered or are preparing to enter upon the work of the farm."

Administration of Vocational Education (1948)

> ". . . designed to meet the needs of persons over fourteen years of age who have entered upon or who are preparing to enter the occupation of farming."
>
> ". . . designed to meet the needs of persons over fourteen years of age who are preparing for farming or who are engaged in farming."

The publication in 1948 (168) quite obviously recommended that the educational objectives should be preparation for farming. "Work of the farm" was farming. In 1950 the American Vocational Association publication, A New Look

at Life Adjustment Education, stated that vocational agriculture for all-day students should be designed for those preparing for the work of the farm and no others (178). Again, "work of the farm" was defined as farming.

In general, during this period, relatively little emphasis was given in publications to objectives for the program. There seemed to be almost a singleness of objectives, or at least a concentration of purposes of the program, as preparation for farming. Other objectives may have been recommended during this period but the publications from the groups included in this study did not emphasize them.

Enrollment in vocational agriculture. One trend in the recommendations given during this period regarding enrollment, as compared to previous periods, was the stronger emphasis placed upon enrolling students with a vocational objective of farming. This was further emphasized in the recommendation that only those students farming or planning to farm, who had facilities for conducting satisfactory farming programs, should be enrolled (179; 185).

Several specific recommendations were given for factors to consider when selecting students. These factors have been summarized as follows:

1. Students show that they can meet supervised farming requirements.

2. Students usually required to show that they are preparing to engage in farming.

3. Teacher approve registration in vocational agriculture.

A bulletin issued in 1954 by the Vocational Division, U.S. Office of Education recommended that enrollment in vocational agriculture be limited to those who had entered or were planning to enter the occupation of farming.

> The enrollment in vocational agriculture of students who do not plan to become farmers should be avoided because it is not the best use of their time and that of the instructor. (175:27)

In general, since the passage of the Vocational Education Act in 1917, the recommended practices regarding who should be enrolled shifted from (a) those who had entered upon or were preparing to enter upon the work of the farm, to (b) those who had entered or were preparing to enter farming. At no time were recommendations given regarding the enrollment of students planning to attend an agricultural college or enter an occupation related to farming. Vocational education in agriculture was recommended as preparation for the vocation of farming.

Content of high school program of vocational agriculture. There was relatively little change in the recommendations for the content of the program during this period. It has been noted that from 1917 to 1940 the recommended content had undergone very few changes. The recom-

mended content has been summarized, in a very general way, in Table VIII.

Supervised farming programs were recommended as integral parts of the total program rather than as appendages to the program. There was some change in the terminology used to describe the recommended supervised farming programs but probably not much change in the practices recommended.

During this period some recommendations were made for development of advisory councils for local departments of vocational agriculture. In the period 1900-1910 advisory councils had been recommended, but from then until late in this period very little attention was given to recommendations for them as a part of the program.

Some recommendations were given to include leadership training and competitive activities as a part of the total training program. These activities were recommended primarily as a means of accomplishing certain educational objectives.

From time to time recommendations had been given to include promotional activities as a part of the local vocational agriculture program. In the period 1917-1928 some recommendations were given for the local teacher to assume responsibility for certain public relations activities. In 1944 and 1954 the bulletins on developing supervised farming programs recommended that it was the instructor's re-

TABLE VIII

SUMMARY OF GENERAL CONTENT RECOMMENDED DURING PERIODS 1917-1928, 1929-1940, AND 1941-1954

1917-1928	1929-1940	1941-1954
Classroom Instruction	Classroom Instruction	Classroom Instruction
Supervised Farm Practice Productive Projects Improvement Projects Supplementary Farm Practices	Supervised Farm Practice Major Cash Enterprises Minor Cash Enterprises Contributory Enterprises Supplementary Farm Practices Farm Mechanics Jobs	Supervised Farming Program Production Enterprises Improvement Projects Supplementary Farm Practices Farm Mechanics Jobs
School Land for Demonstrations and Directed Practice in Agriculture	Farm Mechanics	Farm Mechanics
	Chapter of F.F.A.	Chapter of F.F.A.
		Advisory Council

sponsibility to inform others about the place of the supervised farming program in vocational agriculture.

> It is the responsibility of the instructor of vocational agriculture to see that the principal, the superintendent, the advisory council, and the local board of education are informed about the place of the supervised farming program in vocational agriculture. (175:26)

During this period there seemed to be a slight change in the terminology used to describe the mechanical phase of the program. "Farm shop instruction" was the descriptive title used until later in the period when "farm mechanics" tended to replace it. "Farm mechanics" was described as including farm shop work, farm power and machinery, and several other areas.

In general, the recommendations for this period were for a local program of vocational education in agriculture to include classroom instruction, supervised farming programs, farm mechanics, a chapter of Future Farmers of America, and an advisory council.

Vocational agriculture as a part of the high school program. The recommendations during this period for scheduling vocational agriculture came primarily from the U.S. Office of Education, Vocational Division, just as they did in the period 1929-1940. One recommendation was noted for including a course in general agriculture in the high school program as well as vocational agriculture. This represented one of the few times since passage of the Voca-

tional Education Act in 1917 that agricultural education was recognized as inclusive of more than vocational agriculture.

Recommendations for a course in general agriculture had been made in the early 1920's in a report by an N.E.A. committee. In 1950 a bulletin from the A.V.A. recommended, as a part of life adjustment education programs, general agriculture as a part of the high school curriculum.

> A sound course in general agriculture, taught by an experienced, competent teacher, has tremendous possibilities for meeting the needs of many youth in both rural and urban areas. The promotion, improvement, and expansion of such instruction should constitute an important objective of life adjustment education programs. (178:22)

In 1948 it was recommended that in the years ahead the teacher of vocational agriculture should be scheduled for one-half day with in-school groups and one-half day with out-of-school groups (185:155). No similar recommendation was noted, in preceding years, for the teacher to be scheduled one-half day for working with out-of-school groups.

Policy Bulletin No. 1, revised in 1948, presented five plans for scheduling classes and meeting minimum time provisions. These were based upon the recommendation that sufficient school time should be provided to allow for class, laboratory, and farm shop instruction, as well as for field trips.

Examples of acceptable plans for minimum time provisions which may be included in the State plan follow:

Plan A--Two consecutive 60-minute periods of instruction, 5 days per week, for 1 year; and one 60-minute period of instruction, 5 days per week, for the other years.

Plan B--Two consecutive 60-minute periods of instruction, 2 days per week, and one 60-minute period, 3 days per week, for each class, each year.

Plan C--Two consecutive 45-minute periods of instruction per day, 5 days per week, for each class, each year.

Plan D--Sixty minutes of 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 for adult farmers for not less than a total of 72 clock-hours during the year.

Plan E--Thirty clock-hours of scheduled class instruction in agriculture during each school month for each class. (168:39)

Plans B and C had been recommended during the period 1929-1940. Plans A, D, and E apparently were new during this period.

It was recommended that instruction in farm mechanics be a part of the regular program of vocational agriculture rather than scheduled as a separate course (173). Other recommendations included (a) four years of instruction, (b) students able to register for vocational agriculture each year without conflict with required courses, (c) teacher devoting full-time to teaching vocational agriculture, (d) some time scheduled in the afternoon of the school-day to supervise farming programs, and (e) use of summer months for development of the local program (177:28).

Methods to use for teaching agriculture. In all previous periods much attention was given in the publications to methods for teaching agriculture. During 1941-1954 many practices were recommended for the development of farming programs. Teachers were urged to use supervised farming programs and the F.F.A. as methods of teaching. The groups studied did not issue any bulletins on methods of teaching vocational agriculture during this period.

Some recommended practices included (a) extensive use of committee action in the F.F.A., (b) supervised farming programs on home farms (placement for farm experience was to be the exception rather than the rule), (c) farm visits throughout the year, (d) students to keep records of farming programs, and (e) seek cooperation of parents in developing farming programs.

In general, teachers were urged to base their instruction on real problems appearing in the students' farming programs. The local chapter of Future Farmers of America and students' farming programs were to be means of helping students achieve the desired educational development.

Supervised farming in vocational agriculture. During this period two bulletins dealing with practices for teachers to use in helping students develop farming programs were issued by the U.S. Office of Education, Vocational Di-

vision, one in 1944, and the other in 1954. Both of these publications recommended practices which would help develop farming programs as an integral part of vocational agriculture rather than as an appendage. The evaluation of local programs in 1940 and 1941, published in 1949 (177), also described many recommended practices.

The description given of typical "very superior" supervised farming programs of high school students gave implications for desirable practices for the content of farming programs.

> The typical "very superior" supervised farming program offered specific training, inasmuch as the farm enterprises included were those in which the trainee expected to engage as a farmer and were those common to the community. Usually this program made a real contribution to the permanent improvement of the home farm. It offered a high quality of managerial experience, usually involving the management of all or part of a farm. This typical program provided for several approved practices beyond those found on the home farm, and it showed advancement each year in the farming methods and the continuation of projects. This "very superior" program had particular merit in that it provided the nucleus of a farm business either at home or elsewhere. In cases where the young man was to farm with his parents, the program provided for the development of a partnership plan. (177:10)

Procedures used for developing and supervising farming programs in "very superior" programs gave implications for recommended practices.

> In the typical "very superior" program, arrangements were made for a student's supervised farming program previous to or at the beginning of his first year of vocational agriculture, in three-way conferences of the parents, the boy, and the teacher.

> About the same time the student and the teacher made a survey of enterprises on the home farm and recorded the findings.
>
> The teacher made a systematic and thorough attempt to explain the purposes of supervised farming programs to the parents at the beginning of the student's first year of vocational agriculture. The teacher and student discussed with each parent how the supervised farming program fitted into the development and management of the home farm. A written agreement concerning the first year's supervised farming program between the parent, teacher, and student was made, although not necessarily signed by the parent.
>
> A teacher in the "very superior" program made an average of eight visits to each first-year student's supervised farming program during the year. Of all the visits made by teachers, 60 percent were functional, 27 percent were inspectional, and 13 percent were for other purposes. Most of his students, during their first year of vocational agriculture, planned a long-time supervised farming program. (177:5)

Farming programs were advocated as a means for the students to secure experience in buying, selling, and management of money; also, a means of acquiring livestock, equipment, and capital necessary for establishment in farming (178:19).

A comparison was made of the recommendations presented in publications dealing with farming programs. Three bulletins, which were published in 1930, 1944, and 1954, are compared in Table IX.

The bulletins published in 1944 and 1954 gave more specific practices which teachers could use in developing supervised farming programs than were given in previous bulletins. In fact, the more recent bulletins advocated practices which, in general, tended to be methods of devel-

TABLE IX

A COMPARISON OF THREE BULLETINS ON SUPERVISED PRACTICE IN AGRICULTURE

	1930	1944	1954
Title:	Supervised Practice in Agriculture Including Home Projects	Directing Vocational Agriculture Day-School Students in Developing Their Farming Programs	Guiding High-School Students of Vocational Agriculture in Developing Farming Programs
Content of supervised practical work:	Many kinds of supervised practice: farm enterprises as projects; supplementary farm practices; farm mechanics or farm-shop jobs; school plots; group, class, or cooperative projects; general farm work, and farm management.	Individual student's supervised farming program to include: major cash projects, minor cash projects, contributory projects, improvement projects, and supplementary farm jobs; placement for farm experience to be the exception and not the rule.	Individual student's farming program to include: major production enterprises, improvement projects, and supplementary farm jobs or practices; placement for farm experience to be the exception and not the rule.
Method of supervision:	Home visits to study the conditions at home, attitudes of parents, problems, etc.; visits for purposes of instruction and follow-up of previous instruction; visits made according to need as practices are taught seasonally; scorecards suggested as method of measuring pupil's proficiency.	Farm visits to follow-up development and conduct of plans made; visits to give special assistance as needed, check analyses and job plans, check survey information, check time budgeted by student for various activities; visits to assist student establish and maintain project stand-	(Practically the same as in 1944)

TABLE IX (continued)

	1930	1944	1954
		ards. Instructor should keep record of project progress and farm visits, know special abilities of student, and follow-up student on farming program after he leaves school.	
Content of student plans for supervised practice:	Objectives, financial arrangements to be made, equipment to be purchased or rented, estimate of returns and cost of the project, a budget, analysis of managerial decisions that are made, and definite statement of operations to be performed, and standards of practice to be followed.	Listing of jobs to be analyzed in each project, working equipment and supplies needed, and references needed; each job analysis should include how and when to be performed, how hazards are to be avoided, use and purpose of materials and equipment needed, labor, and sources of additional help.	(Practically the same as in 1944)
Basic principles in conduct of directed or supervised practice:	(Identical to those listed in 1923 and 1926)	(None listed as such, but practices given not in conflict with principles stated in earlier bulletins)	(Same as in 1944)

TABLE IX (continued)

	1930	1944	1954
Factors for students to consider in selecting supervised farming programs:	Survey of farm for soil, equipment, and facilities; kind of farm-occupation being prepared for; expected financial returns; represent vital problems on the farm; opportunities for improvement on the farm; and time available.	Type of farming on home farm and in community; trends in farming; availability and stability of markets for major products; relative importance of major enterprises on home farm and in community; personal likes and dislikes; facilities and equipment required and available; previous experience; opportunity for ownership and managerial responsibility; opportunity for satisfying home life.	(Same as in 1944)
School credit for supervised practice:	(Practically the same as in 1923 and 1926)	(Not listed as such in this bulletin)	(Not listed as such in this bulletin)
Characteristics of supervised farm practice program:	Should include one or more major enterprises continued throughout the time the student is in school; should include related and contributory enterprises and jobs, including farm shop and engineering jobs; should include minor cash enter-	Should provide for a plan that leads to establishment in farming; a program that expands and improves from year to year; satisfactory business arrangements including financial and managerial responsibility by the student;	(Same as in 1944 except for three additional items) Integration with total home farm operations; incorporation and use of approved farm practices; and inclusion of safety practices for protection of persons, livestock, and property.

TABLE IX (continued)

	1930	1944	1954
	prises; should be of such scope and size for enterprises and jobs as to require use of regular farm equipment; should be of sufficient scope to provide adequate training for the development and proficiency in the kind of farming for which the student is in training; most of the work should be performed largely by the student; student should assume financial responsibility through ownership; should have complete and accurate records; records should be analyzed and interpreted; should make new plans for coming year based upon experiences and interpretations of previous work.	analysis and interpretation of records and results; major and minor projects that enter into the type of farming selected and necessary contributory projects; and adequate experience in farm mechanics activities.	
Method of implementing supervised farming program:	(Practically same as for 1923 and 1926)	Start it as early as possible in training program; acquaint student with idea of "growing into farming"; analyze farming program of former students; make farm survey to determine situation; help student determine type of farming he wants to enter; plan with student and parents on home farm; use special parents' meetings students prepare, study, and execute plans.	(Practically same as for 1944)

oping farming programs, whereas earlier bulletins tended to advocate practices for using supervised practice as a method of teaching. Suggestions were given to teachers regarding jobs to teach to help students start supervised farming programs and to further develop and expand their farming programs (175:59,67; 179:56,62-63).

The recommended practices for evaluating students' supervised farming programs tended to be more inclusive than in previous periods. The practices tended to deal with the content of evaluation and very little, if any, with when or how to conduct the evaluation. The following practices were summarized from the two bulletins issued in 1944 and 1954. They were given as "criteria suggested for use in evaluating supervised farming programs."

Have the parents cooperated in the development of the student's supervised farming program?

Has a budget been worked out for each project?

Have business agreements been prepared for the farming program?

Has the student developed and used satisfactory plans for his farming program?

Has the student actually had full managerial, operational, and financial responsibility for his farming program?

Has the student's farming program increased in scope or number of projects, or both, from year to year?

Were the project standards, quality of work, quality of product, and goals improved from year to year?

Were project returns reinvested in a farming program leading to satisfactory establishment in farming?

The total supervised farming programs were recommended as one area of work to consider when evaluating the effectiveness of the program of vocational agriculture. The factors to be considered were the same in 1944 and 1954 except for these three that were not given in 1944:

> That full and effective use is made of a well selected and organized advisory council.
> That standard approved production practices are well understood and used by the students.
> That established production goals were met or exceeded by the students in their farming programs. (175: 80-81)

In general, the factors to consider in evaluation were: (a) starting farming programs prior to or near the beginning of first year in vocational agriculture, (b) consultation with parents regarding programs, (c) thoroughness of student planning and carrying out of plans, (d) farming programs based on satisfactory establishment in farming, (e) farm visits planned to assist at crucial periods in farming problems, and (f) influence of farming programs in improving the agriculture in the community (175; 179). The factors were those which tended to measure effectiveness of the program in terms of establishment in farming.

It was recommended that group activities of the local chapter of Future Farmers of America could provide aid and participation in developing well-planned and comprehensive farming programs (175; 179). These practices have been discussed in greater detail in the section dealing with the Future Farmers of America.

Agricultural subject matter--how determined. During prior periods recommendations for methods of determining content varied considerably. Prepared course outlines based on the known technical information in various fields were once advocated; later more attention was given to basing instruction on the needs of the student for success in a farming vocation. Still later, enterprise analysis and job analysis were recommended along with the needs arising from the student's individual supervised farming program. In the period 1941-1954 relatively few recommendations were given regarding the method of determining the subject matter.

The recommended objectives for programs of vocational agriculture during this period pointed toward determining the subject matter according to the needs of students planning to enter the occupation of farming. All students were to have supervised farming programs and the needs arising from these programs were to be basic in determining the course of study, along with the types of farming prevailing in the community.

> The content of any course of study in vocational agriculture should be derived from students' needs in terms of their farming programs and the type or types of farming prevailing in the locality, especially the types on their home farms. (175:6)

Farm surveys were recommended as a method of determining course content. Recommendations were also given

for teachers to use advisory councils for interpreting survey results and giving suggestions for course content (175: 7).

Agricultural subject matter--what should be taught each year. It has been noted that prior to 1917 rather definite sequences of courses had been advocated. From 1917 to 1940 practically no recommendations were made for definite sequences of courses during the four-year program for students enrolled in vocational agriculture. Recommendations were given for the cross-sectional method of organizing the subject matter so that each year the students were to study appropriate jobs from the enterprises included in the farming vocation for which they were preparing.

During the period 1941-1954 no recommendations were made for definite sequences of courses. Bulletins dealing with instruction tended to describe the content of the four year course as that which would lead to establishment in farming based upon the farming programs of the students. At the beginning of the first year the teacher was to help the student select and start his supervised farming program. The farming programs were to be the basis for instruction.

Emphasis was placed upon the development of proficiency in farming on the part of the students enrolled. Proficiency in farming was described, in terms of the objectives, as effective ability to produce farm commodities

efficiently, market farm products advantageously, conserve soil and other natural resources, use mechanization effectively in farming and home living, manage a farm business, and improve home living on the farm (181:3).

Practically no publications dealing with agricultural subject matter were issued by the groups studied during this period. The few publications issued dealt primarily with the methods of developing the program rather than with agricultural subject matter.

In general, instruction was to be based on real problems appearing in students' farming programs and the development of farming programs was to be started the first year.

> A supervised farming program to meet the needs of a student who desires to become established in farming must be put into operation as early as it is feasible and should continue to expand and improve throughout the training period. The first day a student enrolls in vocational agriculture or earlier is the time to start him on the long-time planning of his farming program. (175:1,3)

Agricultural subject matter--specific subjects. The material just presented in what should be taught each year showed that practically no publications were issued during this period with recommendations for specific technical agriculture subject matter to be taught. During the period 1911-1916 the instructional areas recommended tended to be very similar to the instructional areas in the agricultural college programs. During the period 1929-1940 instruction-

al areas recommended were dominated by the enterprise-analysis-method with emphasis placed upon the development of abilities. Also, such things as cooperation, rural leadership, farm credit, landscaping, and land conservation were recommended as a part of the instructional program.

There was no mention of specific subject matter, such as varieties of wheat, to be taught except as needed by students in conducting their farming programs. The subject matter to be taught each year was that which would help the students satisfactorily conduct and expand their supervised farming programs.

Agricultural subject matter--how organized. Recommended practices for organizing subject matter underwent considerable change during the periods from 1900 to 1954. Biological and botanical classification, chronological sequence, enterprise and job analysis with managerial and operational jobs, and cross-sectional were all methods advocated at one time or another. During 1929-1940 it was recommended that teachers use the cross-sectional method of organizing the subject matter with the subject matter selected for each year according to the needs of the students as their farming programs were developed.

Some changes in emphasis for organization of subject matter were made during 1941-1954. With no exceptions, teachers were urged to use the students' farming programs

as a basis for the instruction and to use the cross-sectional method of organization.

> First, organize the course of study on the basis of the students' farming programs which represent a cross-section of local farming instead of segregating portions of the course, such as crop studies in one year and animal studies in another year, on an abstract and formal subject-matter basis.
>
> Second, organize the course of study on a farm problem or activity basis, instead of on an informational or straight subject-matter basis. Distribute activities and problems of the students in the various enterprises over more than one year. Likewise, emphasis may be given appropriately to operative and managerial jobs as the students' needs develop. . . . From the standpoint of the instructor, the combined individual farming programs of students become the core of the instruction offered. (175:7)

In general, it was recommended that the course of study should be built around enterprises represented in the supervised farming programs. The course should be organized on a cross-sectional or horizontal basis, and arranged seasonally. The units of organization of the course of study were to be in terms of farm problems or activities.

Farm mechanics instruction. Local programs of vocational education in agriculture during this period were to include work in farm mechanics. Recommendations were given regarding necessary facilities and equipment, methods of determining instruction needed, general areas of content, and many other aspects of the program.

It may be recalled that before 1917 very few, if any, recommendations were given for farm mechanics as a part of agricultural education. From 1917 to 1940 there

was an increasing amount of emphasis given to farm shop as a part of the vocational agricultural program. It was not until the late thirties that recommendations were generally given to have shop work as a definite part of the program. During the period 1941-1954 many practices were recommended for local programs.

Farm mechanics was recommended as a definite part of the program of vocational education in agriculture, both through instruction conducted in farm shop facilities and as a part of the supervised farming program. It was further recommended that such training should be handled by properly trained teachers of agriculture.

> Every department should be provided with adequate farm shop facilities specifically designed for farm shop activities. Shop instruction should be given by an instructor well versed in farm problems. This work can best be handled by properly trained agricultural teachers. (185:155)

It was recommended that the instruction in farm mechanics should be an integral part of the vocational agriculture course and not a separate course. Sufficient school time was to be provided in the daily schedule to allow for instruction in farm mechanics.

The students' supervised farming programs were to include experiences in farm mechanics activities. Improvement projects and supplementary practices were recommended as ways of including farm mechanics activities, such as repair and construction of buildings, machinery, tools, and equipment.

Special farm mechanics surveys by the students were recommended as a method of determining the repair and construction needs on the home farm, buildings, tools, and equipment (175:40). The areas of instruction were to include farm shop work, farm power and machinery, farm buildings and conveniences, soil and water management, rural electrification, and processing of farm products.

Objectives of farm mechanics instruction were stated by Glen Cook in an article published in the Agricultural Education Magazine.

> The primary objective of farm mechanics instruction is the development of student abilities necessary to perform the unspecialized mechanical activities to be done on the farm with the tools and equipment accessible. . . . Some contributory objectives may be stated as follows: (1) To enable students to construct or repair suitable equipment essential for their supervised farming programs; (2) to encourage and guide students in developing a desirable home-farm shop; (3) to develop abilities in using tools and equipment effectively; (4) to develop student interest, attitudes, habits, ideals, and understandings in farm mechanics activities; (5) to develop abilities in performing and workmanship; (6) to develop abilities in the safe use of equipment in making the shop a safe place in which to work. (169:12-13)

Neither these objectives nor any objectives for farm mechanics were ever included during this period in official publications from the leadership groups studied.[11]

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[11]A committee from the American Society of Agricultural Engineers in collaboration with an advisory group of agricultural education specialists made recommendations in 1944 and subsequent years on the engineering phases of

Perhaps the statement of objectives in Monograph No. 21 were considered sufficient and it was considered undesirable to establish a separate set of objectives for farm mechanics.

Rather detailed recommendations were given by A.H. Hollenberg in 1946 regarding facilities and equipment for farm mechanics work. The following were summarized from some of the suggestions given to those planning new facilities (172):

1. The classroom and farm shop should be in one unit.
2. The farm mechanics should be taught in a shop used only for that purpose.
3. The floor space should be left as free as possible from work benches.
4. The shop should include at least one large door through which farm machinery can be moved.
5. The tools and equipment should be stored in wall cabinets on a unit basis according to the work areas.
6. The shop should have an exhaust fan.
7. The instructor's office should be located so as to permit full vision of the activities within the farm shop and the classroom.

Hollenberg also advocated a minimum list of tools and equipment which should be in the farm mechanics shop (173). He was opposed to the tool room system of storing

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teacher-training for vocational agriculture. The reports implied that the same engineering phases should be included in the high school program.

tools and equipment. His recommendations were as follows:

> One way is thru the use of separate wall cabinets for each shop enterprise, advantageously placed in the shop, to care for all of the tools for the enterprise, as concrete work. . . . Another system involves the use of a single, centrally located cabinet in which all tools and equipment are stored. Still another method is that in which the tools are placed on an A-shaped truck to be moved from place to place within the shop. Some may find it expedient to use a combination of these methods. (173:26)

The evaluation of local programs of vocational education in agriculture during this period gave recognition to many kinds of practices which resulted in a "very superior" program. The content of farm shop and farm-shop equipment for such a program included such things as the following (177:64):

1. All the tools for doing jobs usually done by farmers in the community.
2. Shop large enough to serve the number of students enrolled.
3. Shop equipped with suitable work benches and vises.
4. Adequate supplies for important repair and construction jobs.
5. Open floor space for assembling and disassembling farm equipment.
6. Efficient system of tool servicing, checking, and storing.
7. Some students to develop farm shops at home.
8. Adequate provisions for replacing, maintaining and purchasing new tools and equipment.

In general, farm mechanics was recommended as an integral part of all local programs of vocational education

in agriculture. It was to be a part of the students' supervised farming programs and their instruction at school. Detailed recommendations were given for desirable facilities and equipment for conducting satisfactory programs.

Agricultural clubs--the Future Farmers of America. During this period many recommendations were given for the use and development of the boys' organization known as the F.F.A. The Vocational Education Act of 1946 (George-Barden Act) included supervision of activities of the Future Farmers of America, activities related to vocational education in agriculture, by vocational agriculture teachers as a part of the total program of vocational agriculture.

There was some use of the "F.F.A." as synonymous with "vocational agriculture" for high school students. This usage was confined to publications and articles other than those from the U.S. Office of Education, Vocational Division. An example of this was in an article in The Agricultural Education Magazine by Gordon Swanson.

> Following are the basic criteria used to evaluate the teaching process or learning experiences in vocational agriculture for F.F.A. classes. . . . (183: 199)

It was recommended that the program of work for a local chapter should be based on the needs of the members, the chapter, the school, and the local community. It was to represent the combined thinking of a majority of the members (174:110).

Suggestions were given for planning and carrying out a chapter program of work. It was not clear as to whether the suggestions were made to students or to teachers, or to both. Therefore the suggestions, as summarized below, were considered as methods with no designation as to responsibilities for accomplishment (174):

1. Review last year's program of work at chapter meetings.
2. Discuss the present needs of the chapter, its members, and the community.
3. Select appropriate items from previous year's program of work and add new items suggested by members.
4. Review copies of the programs of work of the State association and National organization. Select activities appropriate for local program.
5. Review copies of programs of work from other chapters to get ideas of other suitable activities.
6. Appoint a program of work committee consisting of the chairman of the eight major divisions. They should review the program set up by each major division committee and make necessary changes before the entire program is presented to the chapter for adoption.
7. Check the program of work with school authorities and others concerned.

It was recommended that the local F.F.A. chapters be used as a means of teaching, as a method of accomplishing educational objectives. Farm safety was to be taught through chapter activities, such as safety survey, farm safety demonstrations, and a safety program (182). Devel-

opment of supervised farming programs was to be stimulated through group activities of the F.F.A. It was recommended that the local chapter have a committee on supervised farming with responsibilities including the encouragement of members to attain farming goals and use approved practices as indicated in the chapter's program of work (175:30).

Several activities were suggested as the kinds of activities which would contribute to the improvement of the farming programs of the chapter members. The following were selected from activities alvocated in 1944 (179) and in 1954 (175):

1. Establish a loan fund for members.
2. Establish a chapter subsidiary to promote a particular enterprise on the farms, such as dairy, poultry, or swine.
3. Assist members to locate desirable livestock, seed, and supplies.
4. Assist members to develop home libraries on farming.
5. Encourage farm and home improvement projects.
6. Encourage the use of certified seed, hybrid seed, and purebred sires.
7. Conduct farming program tours.
8. Exhibit student agricultural products at fairs and shows.
9. Promote a farm safety program.

The evaluation of local programs of vocational education in agriculture published in 1949 described typical

"very superior" programs of activities and organizational features of the local chapters. It was stated that the typical "very superior" program of work included one or more excellent activities in such areas as cooperative buying, selling, and use of equipment; conservation of soil and other resources; training for leadership; recreation and community service; and promotion of thrift and scholarship (177:21). The organization of outstanding chapters was described as follows:

> The typical "very superior" chapter, from the point of view of organization, held 24 meetings during the year and usually held meetings through the summer months. The members formulated annually a written program of work. . . . Nearly all the students enrolled in vocational agriculture were members . . . and without exception they function actively on committees. . . . These activities afforded experience in positions of leadership to a large majority of the members. The officers . . . post its programs in advance of each meeting. Most of the activities in the program of work were carried to successful completion. Finally, the records of the secretary and treasurer and the annual reports of the chapter were generally complete and accurate. The program of work was usually approved by the school superintendent or principal. (177:24)

The characteristics describing the "very superior" programs were interpreted to be practices which were advocated for local programs of vocational education in agriculture. In general, it was advocated that the activities of the Future Farmer Chapters were to be used as opportunities for teaching.

During the review of literature for this period it was quite obvious that the literature represented only a

portion of the leadership which was exerted by the national organizations, groups, and agencies being studied. The leadership exerted in promoting and developing the national organization of Future Farmers of America was illustrative of the limitations of the study. For example, H.O. Sampson, in an article in the Agricultural Education Magazine in 1945, described the beginning of F.F.A. as follows:

> The FFA as a national organization was officially launched on Nov. 20, 1928, at a meeting called by the late C. H. Lane, then chief of the Agricultural Education Service, Federal Board for Vocational Education. . . .
>
> Previous to the meeting Dr. Lane had sent material to the states describing the proposed organization and suggested that the states send delegates. (180: 13)

If Sampson's statements were correct, some leadership was probably given to the development of local programs which never appeared in the official publications reviewed.

Another example of this same kind of situation, again regarding the Future Farmers of America, was the official manual for the Future Farmers of America. It was probably first published in 1930, and then frequently revised in the ensuing years. The practices, which were advocated through that manual, were not a part of this study. Undoubtedly the manual was prepared and/or approved by representatives from the U.S. Office of Education, Vocational Division. However, the official relationship be-

tween that office and the manual in the early years of the organization was not clear.

In general, during the period 1941-1954 the recommendations regarding the F.F.A. were for it to be an integral part of the program of vocational education in agriculture and for it to be used as a means of teaching.

Measuring and evaluating results in agricultural education. Measurement and evaluation of local programs of agricultural education received much attention during this period. Many national groups were concerned and involved in activities leading to recommended practices for evaluation of local programs of vocational education in agriculture.

A bulletin published in 1949 by the U.S. Office of Education, Vocational Division (An Evaluation of Local Programs of Vocational Education in Agriculture) was the result of work over a period of several years, probably starting in 1938. The study of local programs was made in 1940 and 1941, just before the Second World War. In the foreword of the bulletin R.W. Gregory, then Assistant Commissioner for Vocational Education, stated that the evaluation scales could be used for determining the level of attainment for a State or for a comparison of teachers of vocational agriculture with other teachers (177). The following recommended practices for evaluation were summarized from the bulletin:

1. The scales may serve as a basis for the formulation and revision of standards.

2. The scales may be used by teachers to make a qualitative evaluation of parts of the local program.

The recommended methods for using the scales were not very clear. Definitely, the local teacher was to use the scales. The extent to which students, parents, administrators and others were to be involved was not clear.

Some other practices, which were advocated during this period, for measurement and evaluation were summarized as follows:

1. Measure the effectiveness of instruction by what the student does (179:3).

2. Measure the effectiveness of any local program of vocational agriculture by the number of individuals receiving systematic instruction and the extent to which they become satisfactorily established in farming (175:79; 178:19; 179:70).

3. Responsibility for evaluation of any program of agricultural education lies with the board of education, school administrators, and teacher or teachers responsible for its direction (176:6).

4. Use selected criteria for evaluating the vocational agriculture department in terms of the total supervised farming programs (see the previous section for this period dealing with Supervised Farming Programs).

5. Use selected criteria for evaluating individual students' farming programs (see the previous section for this period dealing with Supervised Farming Programs).

In general, the recommended practices for measuring and evaluating in the early forties tended to involve very

few people. By 1951 the evaluation of a local program was advocated to be the joint responsibility of the board of education, school administrators, and teachers of agriculture.

CHAPTER III

PRESENT-DAY CONCEPTS AND RELATIONSHIPS TO PRACTICES ADVOCATED

In this chapter the reactions of jury members to an opinionaire containing forty-nine concepts (see Appendix A) were reviewed in the light of the practices which were recommended during the period 1941-1954. The analysis of the relationship between the concepts and recommended practices was based upon three questions:

1. What concepts seemed to have general acceptance by the jury members?
2. When did the practices that were related to the concepts come into the scene as recommendations?
3. Have the recommended practices always been in agreement with the concepts accepted by the jury members?

It was inferred that, in general, the leaders in agricultural education would tend to agree with the concepts. There was no clear-cut basis for making any inference regarding the expected reactions of the leaders in educational administration.

Jury reactions to concepts. The number of responses received to the opinionaire was considered very satisfactory: Fifteen leaders in educational administration and fifteen in agricultural education returned the opinionaires.

The thirty responses represented a return by 88% of the jury members. Brief suggestions and comments were made by several of the respondents.

In general, the reactions of the jury members indicated agreement with most of the forty-nine concepts. All thirty respondents checked "agree" on eighteen of the concepts (see Table X). Fifty percent or more of the respondents checked "agree" on forty-five of the concepts. Two concepts were checked "disagree" by fifty percent or more of the jury members who responded. Reactions on two other concepts were somewhat equally divided between "agree" and "disagree" with some "undecided."

The selected leaders in agricultural education tended to be somewhat more in agreement in their reactions to the concepts than the selected leaders in educational administration. All the selected leaders in agricultural education responded "agree" on twenty-nine of the concepts; all the selected leaders in educational administration responded "agree" on twenty-four of the concepts (see Tables X and XI).

The two concepts[12] which were checked "disagree" by fifty percent or more of the respondents were as follows:

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[12]The number assigned to each concept refers to the number which was given to that concept in the opinionaire.

TABLE X

EIGHTEEN CONCEPTS WHICH ONE-HUNDRED PERCENT OF RESPONDENTS CHECKED "AGREE" AS MOST NEARLY REFLECTING THEIR REACTION

9.	Instruction in vocational agriculture should help students function effectively as citizens in a democracy.
10.	Those enrolled should develop the ability to adjust to continuing changed in technology.
12.	Vocational education in agriculture should contribute to the personal growth and development of the individuals enrolled.
13.	The teacher should give both group and individual instruction.
14.	Studies of farming in the community should be made as a partial basis for identifying instructional needs.
15.	Class groups and advisory groups should be utilized in checking or making a determination of needs.
18.	Student-teacher planning should be developed.
19.	Interests of students, intelligence, maturity, experience, aspiration level, and other factors should be recognized in defining instructional needs.
20.	On the basis of recognized needs, individuals and groups should be helped by the teacher and others to establish their own goals.
24.	Instruction in vocational agriculture should be directed to develop an individual's abilities to get along with others and function as a member of groups.
29.	Cooperative activities should be included for all students enrolled in vocational agriculture.
31.	Instruction in vocational agriculture should help students develop the ability to set realistic goals and to reach these goals.
34.	Instruction in vocational agriculture should help develop individual abilities in evaluating opportunities.
37.	Selection and planning of farming programs with the students should involve counsel with parents, teachers, and others.
39.	Farm visits should be made to students at crucial times in their farming programs.
40.	Teachers of vocational agriculture should assist individuals with the selection and evaluation of their farming programs.
44.	The farming programs should provide the students with opportunities to improve farming and farm-family living.
45.	The farming programs should provide the students with opportunities to develop skill in planning farming operations.

TABLE XI

CONCEPTS CHECKED "AGREE" BY ONE-HUNDRED PERCENT OF EITHER LEADERS IN EDUCATIONAL ADMINISTRATION OR LEADERS IN AGRICULTURAL EDUCATION

Checked "Agree" by 100 percent of leaders in school administration who responded but not by leaders in agricultural education.

2. Under special conditions non-farm students may be enrolled. (93%)*
8. Vocational education in agriculture should share in the total responsibility for meeting needs served by public education. (87%)
16. Sources from outside of the school community may have to be utilized to secure a more nearly adequate indication of needs to be met through the local program of vocational education in agriculture. (80%)
23. Instruction in vocational agriculture should assist the youth enrolled in reaching a decision as to vocational choice. (87%)
30. The needs revealed from the standpoint of society should be recognized as of major concern to vocational education in agriculture. (66%)
41. The farming programs should provide the students with opportunities for exploratory experiences in various enterprises. (80%)

Checked "Agree" by 100 percent of leaders in agricultural education who responded but not by leaders in school administration.

1. In general, students enrolled in vocational agriculture should live on farms. (73%)**
22. The farming program should be regarded as a basis for effective instruction. (93%)
25. The problems which individuals have in conducting their farming programs should be a major guide to selecting learning experiences for class instruction. (87%)
26. Instruction in vocational agriculture should lead to the development of abilities required for success in the position of farm operator. (93%)

TABLE XI (continued)

28.	Instruction <u>should</u> be directed to helping individuals solve problems as they are encountered. (93%)
33.	Instruction in vocational agriculture <u>should</u> help develop managerial ability in the students enrolled. (93%)
38.	The conditions of continuity and growth in farming programs <u>should</u> be sought to insure a progressive learning experience and to insure maximum progress toward establishment in farming. (87%)
42.	The farming programs <u>should</u> provide the students with opportunities to acquire experience which will lead to establishment in farming. (87%)
43.	The farming programs <u>should</u> provide the students with opportunity to acquire capital which may lead to establishment in farming. (47%)
46.	The students' farming programs <u>should</u> lead toward establishment in farming. (53%)
48.	A student's farming program usually <u>should</u> include productive projects partially or entirely owned by the student. (73%)

*Percent of leaders in agricultural education who checked "Agree."

**Percent of leaders in school administration who checked "Agree."

7. In general, students who intend to enter related agricultural occupations should not be enrolled in vocational agriculture classes. (13% Agree; 70% Disagree; 17% Undecided)

21. Most of the on-farm instruction may properly be offered during the summer months when school is not in session. (27% Agree; 53% Disagree; 20% Undecided)

The two concepts which brought rather divided reactions from the jury members were as follows:

11. In general, vocational education in agriculture should not lead to establishment in non-farming positions in agriculture. (47% Agree; 40% Disagree; 13% Undecided)

49. The individual's supervised experience in programs away from school normally should not be planned and carried out in the areas of related agricultural occupations. (43% Agree; 27% Disagree; 30% Undecided)

Fifty percent or more of the selected leaders in agricultural education responded "agree" on 47 concepts; fifty percent or more of them responded "disagree" on the remaining two concepts. The two concepts were:

7. In general, students who intend to enter related agricultural occupations should not be enrolled in vocational agriculture classes. (20% Agree; 60% Disagree; 20% Undecided)

21. Most of the on-farm instruction may properly be offered during the summer months when school is not in session. (7% Agree; 93% Disagree)

Fifty percent or more of the selected leaders in educational administration responded "agree" on 41 concepts. Fifty percent or more responded "disagree" on one concept, and their responses were quite scattered on the remaining

seven concepts. The eight concepts not checked "agree" by fifty percent or more were as follows:

4. In general, only students with opportunities for farming should be enrolled. (47% Agree; 33% Disagree; 20% Undecided)

5. Students who do not have opportunities for conducting farming programs should not be enrolled in vocational agriculture classes. (33% Agree; 47% Disagree; 20% Undecided)

7. In general, students who intend to enter related agricultural occupations should not be enrolled in vocational agriculture classes. (7% Agree; 80% Disagree; 13% Undecided)

11. In general, vocational education in agriculture should not lead to establishment in non-farming positions in agriculture. (40% Agree; 47% Disagree; 13% Undecided)

21. Most of the on-farm instruction may properly be offered during the summer months when school is not in session. (47% Agree; 13% Disagree; 40% Undecided)

35. In general, the school should not provide the students with opportunities and facilities required for their individual farming programs. (40% Agree; 33% Disagree; 27% Undecided)

43. The farming programs should provide the students with opportunity to acquire capital which may lead to establishment in farming. (47% Agree; 6% Disagree; 47% Undecided)

49. The individual's supervised experience in programs away from school normally should not be planned and carried out in the areas of related agricultural occupations. (27% Agree; 40% Disagree; 33% Undecided)

The concept regarding offering most of the on-farm instruction during the summer months was checked "disagree" more than any other concept. Concepts dealing with (a) re-

lated agricultural occupations, (b) who should be enrolled, and (c) the kind and place of supervised experiences received the most divided reactions. The selected leaders in educational administration tended to be more undecided regarding the concepts than the selected leaders in agricultural education.

General concepts for method of implementing local programs, and practices advocated. Seven concepts in this area were included in the opinionaire. Those concepts with the percent of respondents checking "agree," "disagree," and "undecided" were as follows:

2. Under special conditions non-farm students may be enrolled. (97% Agree; 3% Undecided)

3. Vocational education in agriculture should be available to all farm boys. (90% Agree; 3% Disagree; 7% Undecided)

1. In general, students enrolled in vocational agriculture should live on farms. (86% Agree; 7% Disagree; 7% Undecided)

6. Farm placement service should be provided by the school. (73% Agree; 10% Disagree; 17% Undecided)

5. Students who do not have opportunities for conducting farming programs should not be enrolled in vocational agriculture classes. (60% Agree; 30% Disagree; 10% Undecided)

4. In general, only students with opportunities for farming should be enrolled. (53% Agree; 30% Disagree; 17% Undecided)

7. In general, students who intend to enter related agricultural occupations should not be enrolled in vocational agriculture classes. (13% Agree; 70% Disagree; 17% Undecided)

Concepts 1, 2, 4, 5, and 7 tended to define methods of determining who should be enrolled in local programs of vocational education in agriculture. Concept 3 tended to define methods of determining schools to offer the program; concept 6, a method of helping students secure farm experience.

General agreement was found with all of the concepts except number seven. The general agreement was on concepts relating to basing enrollment in vocational agriculture on two factors: interest in farming and opportunities for experiences in farming. The disagreement was on the concept which would have excluded students interested in related agricultural occupations from enrolling in a vocational agriculture class.

Prior to passage of the Vocational Education Act in 1917, very few recommendations were made regarding enrollment practices. Quite likely, before 1900, it was assumed that agricultural education programs were for farmers' sons. During the period 1900-1910 the few recommendations given did not discriminate between boys and girls for enrolling in the program. In general, prior to the passage of the Smith-Hughes Act practically no recommendations were given to use the students' vocational interest as a basis for enrollment in the program.

The Vocational Education Act and subsequent interpretations provided some of the first specific recommenda-

tions for enrollment: (a) the students should be over fourteen years of age, and (b) have already entered or be preparing to enter upon the work of the farm or farm home. Interpretations of these always centered upon the age factor. No specific or detailed explanations were given regarding selection of students according to their vocational interest or choice. The recommended practices for enrollment implied that only boys should be enrolled; girls were not mentioned.

During the period 1941-1954 the recommended practices tended to emphasize enrollment of only those students with vocational objectives of farming and with facilities for conducting satisfactory farming programs. Teachers were to avoid enrolling students not planning to farm. Students on farm placement situations were to be the exception and not the rule. No mention was made of practices dealing with students whose vocational interests were in related agricultural occupations.

In general, the practices recommended during the period 1941-1954 were in agreement with the reactions of the selected leaders to the concepts, with two exceptions: (a) providing farm placement service, and (b) enrolling students interested in related agricultural occupations. In these two instances, the review of publications failed to reveal any recommended practices that were in harmony with the reactions of the jury to the concepts.

General concepts for objectives of local program, and practices advocated. Five concepts in this area were included in the opinionaire. Those concepts with the percent of respondents checking "agree," "disagree," and "undecided" were as follows:

9. Instruction in vocational agriculture should help students function effectively as citizens in a democracy. (100% Agree)

10. Those enrolled should develop the ability to adjust to continuing changes in technology. (100% Agree)

12. Vocational education in agriculture should contribute to the personal growth and development of the individuals enrolled. (100% Agree)

8. Vocational education in agriculture should share in the total responsibility for meeting needs served by public education. (93% Agree; 7% Disagree)

11. In general, vocational education in agriculture should not lead to establishment in non-farming positions in agriculture. (47% Agree; 40% Disagree; 13% Undecided)

There was general agreement with the concepts except for the one dealing with establishment in non-farming positions in agriculture. The response to that concept, number 11, indicated a lack of agreement with some "undecided." All five concepts tended to define the content of the local program in terms of various objectives.

Concept 8 tended to define vocational education in agriculture as an integral part of the total public education program.

Several of those five concepts may have had their beginnings in the practices advocated during the period 1900-1910 and just prior to the passage of the Smith-Hughes Act. The practices advocated in those early years tended to recognize agricultural education as a part of the total public education program, rather than something to be taught in separate schools. It was recommended that students enrolled in agricultural courses should also enroll in most of the courses taken by other students.

During the period 1900-1910 it was also advocated that students, after taking the agricultural courses, should know about improved practices in agriculture, be able to interpret and use agricultural information from farm papers and experiment stations, and be good homemakers and progressive citizens. This may be considered as a forerunner to concept number 10 regarding the development of abilities to adjust to continuing changes in technology.

During the period 1941-1954 greater emphasis was put on practices for development of student abilities in citizenship, cooperation, and leadership, particularly through effective local Future Farmers of America chapters.

It was noted that recommended practices for the development of programs of vocational education in agriculture have tended to emphasize the personal growth and development of individuals. However, during the years imme-

diately preceding and following enactment of the Smith-Hughes Act, some of the leaders and groups recommended practices which tended to emphasize mastery of subject-matter by the students rather than the development of "doing abilities."

Concept 11 evoked rather divided reactions (47% Agree; 40% Disagree; 13% Undecided) from the jury members. However, the practices which were recommended tended to be in agreement with the concept. There was an absence of recommended practices dealing specifically with objectives regarding establishment in non-farming positions in agriculture. It was recommended that vocational agriculture should lead to establishment in farming.

Concepts for method of determining content of organized instruction, and practices advocated. Ten concepts in this area were included in the opinionaire. Those concepts with the percent of respondents checking "agree," "disagree," and "undecided" were as follows:

13. The teacher should give both group and individual instruction. (100% Agree)

14. Studies of farming in the community should be made as a partial basis for identifying instructional needs. (100% Agree)

15. Class groups and advisory groups should be utilized in checking or making a determination of needs. (100% Agree)

18. Student-teacher planning should be developed. (100% Agree)

19. Interests of students, intelligence, maturity, experience, aspiration level, and other factors should be recognized in defining instructional needs. (100% Agree)

20. On the basis of recognized needs, individuals and groups should be helped by the teacher and others to establish their own goals. (100% Agree)

22. The farming program should be regarded as a basis for effective instruction. (97% Agree; 3% Undecided)

16. Sources from outside of the school community may have to be utilized to secure a more nearly adequate indication of needs to be met through the local program of vocational education in agriculture. (90% Agree; 7% Disagree; 3% Undecided)

17. An individual's needs for specific instruction in agriculture should be determined from a study of his farming situation. (73% Agree; 20% Disagree; 7% Undecided)

21. Most of the on-farm instruction may properly be offered during the summer months when school is not in session. (27% Agree; 53% Disagree; 20% Undecided)

There tended to be a high degree of agreement by the jury with all ten concepts, except number 21. More than fifty percent disagreed with number 21, and apparently were not in favor of having most of the on-farm instruction offered during the summer months. That concept was the one concept in the group of ten that had no supporting practices advocated in the materials reviewed for the period 1941-1954. In 1910, and until approximately 1917, it was commonly recommended that the supervision be done during the summer. However, since that period, according to the

literature reviewed, there was general agreement that the supervision should be conducted during all seasons of the year.

The recommended practices dealing with (a) methods of determining course content and (b) methods of instruction went through many changes, many of which were not in harmony with concepts agreed upon by the jury. During the period 1900-1910 it was quite generally advocated that the course content should be determined by experts in technical agriculture. During 1911-1916 the recommended practices tended to recognize that the local community and its agricultural situation should be considered as being of some importance in determining content. Teachers were advised to make community surveys.

Studies of farming in the community were not generally recommended, as a partial basis for identifying instructional needs, until the early part of the period 1917-1928.

During the period 1911-1916 it was recommended that advisory groups of outstanding farmers should assist the teacher in determining course content. That practice was not recommended again, in general, until the period 1941-1954.

During the period 1911-1916 it was recommended that teachers use the student's farming situation (his projects) to determine his instructional needs. It was advocated by

some that the classroom instruction should be based on home-projects; others advocated determining home-projects according to the major enterprises studied in the classroom. There was criticism by some that the project was too narrow a base for determining the course content. During later years there seemed to be rather general agreement for using the farming program as a basis, but not the only basis, for determining the course content.

Practices advocated during 1929-1940 tended to emphasize some involvement of parents and students in course planning, but during 1941-1954, there tended to be more recommended practices for involving student-teacher-parent planning.

Concepts for objectives of organized instruction, and practices advocated. Twelve concepts in this area were included in the opinionaire. Those concepts with the percent of respondents checking "agree," "disagree," and "undecided" were as follows:

24. Instruction in vocational agriculture should be directed to develop an individual's abilities to get along with others and function as a member of groups. (100% Agree)

29. Cooperative activities should be included for all students enrolled in vocational agriculture. (100% Agree)

31. Instruction in vocational agriculture should help students develop the ability to set realistic goals and to reach those goals. (100% Agree)

34. Instruction in vocational agriculture <u>should</u> help develop individual abilities in evaluating opportunities. (100% Agree)

26. Instruction in vocational agriculture <u>should</u> lead to the development of abilities required for success in the position of farm operator. (97% Agree; 3% Undecided)

28. Instruction <u>should</u> be directed to helping individuals solve problems as they are encountered. (97% Agree; 3% Disagree)

33. Instruction in vocational agriculture <u>should</u> help develop managerial ability in the students enrolled. (97% Agree; 3% Undecided)

23. Instruction in vocational agriculture <u>should</u> assist the youth enrolled in reaching a decision as to vocational choice. (94% Agree; 3% Disagree; 3% Undecided)

25. The problems which individuals have in conducting their farming programs <u>should</u> be a major guide to selecting learning experiences for class instruction. (93% Agree; 7% Undecided)

30. The needs revealed from the standpoint of society <u>should</u> be recognized as of major concern to vocational education in agriculture. (84% Agree; 3% Disagree; 13% Undecided)

32. Vocational education in agriculture <u>should</u> be primarily concerned with goals relating to efficiency in farming. (73% Agree; 17% Disagree; 10% Undecided)

27. Instruction in vocational agriculture for those who are not established as farm operators <u>should</u> emphasize contributions to success in the particular agricultural position which the individual occupies. (63% Agree; 20% Disagree; 17% Undecided)

In general, there tended to be agreement by the jury with all twelve concepts. Concept number 27 was not

clearly stated with the result that seventeen percent of the respondents checked "undecided."[13]

There was a lack of agreement between the consensus by the jury on concept number 23 and the practices which were advocated during the period 1941-1954. The practices advocated tended to assume that the vocational choice was made before enrolling in vocational agriculture, except for possibly deciding the type of farming to enter. During the period before 1900 True advocated that the program of agricultural education should help farm boys make a choice of their life occupation. However, after that period there tended to be very little reference to instruction which would help the student make a decision as to vocational choice.

During the period 1917-1928 practices were advocated to help develop the students' abilities to function as a group, to work together cooperatively. Perhaps the student organizations advocated for such things as purchasing and marketing were the forerunners of F.F.A. cooperatives.

The project methods of teaching were not advocated until the period 1911-1916, during which time practices were also recommended for basing at least part of the instruction on problems faced by the students on the farms.

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[13]The comments written on the opinionaires by the respondents indicated that the concept was not clearly stated. Other concepts with as many or more checking "undecided" did not have the comments indicating they were not clearly written.

Prior to that time the recommended content was primarily technical agricultural information based on the science of agriculture.

During the period 1941-1954 practices were more commonly advocated for developing student abilities needed for success as a farm operator than in previous periods. Also, the abilities required tended to be defined somewhat broader than in previous periods.

Concepts for method of implementing farming programs, and practices advocated. Five concepts in this area were included in the opinionaire. Those concepts with the percent of respondents checking "agree," "disagree," and "undecided" were as follows:

37. Selection and planning of farming programs should involve counsel with parents, teachers, and others. (100% Agree)

39. Farm visits should be made to students at crucial times in their farming programs. (100% Agree)

38. The conditions of continuity and growth in farming programs should be sought to insure a progressive learning experience and to insure maximum progress toward establishment in farming. (94% Agree; 3% Disagree; 3% Undecided)

36. Farming activities conducted as a part of the student's vocational agricultural program should be carried out chiefly on the home farm from which the student comes. (83% Agree; 7% Disagree; 10% Undecided)

35. In general, the school should not provide the students with opportunities and facilities required for their individual farming programs. (63% Agree; 20% Disagree; 17% Undecided)

The respondents tended to agree with all five of the concepts, with the least agreement (63%) on concept number 35.

Practices advocated during the periods 1929-1954 tended to be in agreement with those five concepts. Early in the development of agricultural education, before home-projects were advocated, school land was recommended as essential to help the students gain "doing" experiences. During the period 1900-1910, when the science of agriculture was emphasized in recommendations, teachers were urged to utilize laboratory exercises and field trips, as well as school land, as a means of helping students develop such skills as pruning trees, testing milk, judging livestock, and culling chickens.

Home-projects were recommended during the period 1911-1916, and school land was recommended for demonstrations and directed work in agriculture. During the period 1929-1940 practically no recommendations were made for the use of school land as a part of the program of vocational agriculture.

The recommended practices for developing farming programs on the home farm tended to originate during the period 1911-1916 when the home-project was advocated by Stimson and others. Even in those years of early developments on home-projects it was recommended that the select-

ing and planning of the projects should involve the student, parents, and teacher.

During the period 1917-1928 it was recommended that the farming programs have continuity from year to year and that they should grow in scope. Many refinements in those practices were recommended in the following periods.

The practices regarding supervision of farm experience programs for students changed considerably from 1900 to 1928. Prior to 1910 no mention was made of concurrent farm experience programs as a part of agricultural education in the high school. In 1910 it was recommended that during the summer the teacher supervise demonstration and experimental plots conducted by the students on their home farms. When home-projects were first recommended as a part of the instructional program, summer supervision by the teacher was stressed. During the period 1917-1928 the recommendations were for the teacher to visit the students on the home farm throughout the year instead of primarily during the summer.

Concepts for objectives of farming programs, and practices advocated. Ten concepts in this area were included in the opinionaire. Those concepts with the percent of respondents checking "agree," "disagree," and "undecided" were as follows:

40. Teachers of vocational agriculture should assist individuals with the selection and evaluation of their farming programs. (100% Agree)

44. The farming programs should provide the students with opportunities to improve farming and farm-family living. (100% Agree)

45. The farming programs should provide the students with opportunities to develop skill in planning farming operations. (100% Agree)

42. The farming programs should provide the students with opportunities to acquire experience which will lead to establishment in farming. (93% Agree; 7% Undecided)

41. The farming programs should provide the students with opportunities for exploratory experiences in various enterprises. (90% Agree; 10% Undecided)

48. A student's farming program usually should include productive projects partially or entirely owned by the student. (87% Agree; 3% Disagree; 10% Undecided)

47. The farming program should be broad and comprehensive in order that learning experiences may be broad and comprehensive. (83% Agree; 7% Disagree; 10% Undecided)

46. The students' farming programs should lead toward establishment in farming. (76% Agree; 7% Disagree; 17% Undecided)

43. The farming programs should provide the students with opportunity to acquire capital which may lead to establishment in farming. (74% Agree; 3% Disagree; 23% Undecided)

49. The individual's supervised experience in programs away from school normally should not be planned and carried out in the areas of related agricultural occupations. (43% Agree; 27% Disagree; 30% Undecided)

There tended to be general agreement by the jury with nine of the concepts, but opinions were divided on concept number 49. That concept, dealing with supervised experience in areas of related agricultural occupations, and other concepts dealing with related agricultural occupations,

evoked the greatest division of opinions of the entire set of concepts. In the instance of concept number 49, although more agreed than disagreed with the concept, there was no basis for concluding that the concept was acceptable in the same sense that most of the other concepts were accepted.

Practices for having the teacher assist the students in selecting their farming programs were advocated much earlier than practices for the teacher to assist the students in evaluating their farming programs. It was not until the period 1941-1954 that the practices which were recommended tended to include the student with the teacher in evaluation. Prior to that time the teacher was to do most of the evaluating, although some recommendations were given for the teacher to assist the students in analyzing the records of their farming programs.

In general, from 1911-1954 there were recommended practices for the student to use the farming program to secure experiences which would help him become established in farming. The use of farming programs to acquire capital for establishment in farming was not emphasized as a purpose of farming programs until the period 1941-1954. In general, it was never recommended that a purpose of the farming programs was for students to obtain exploratory experiences in various farming enterprises.

During the period 1911-1916 it was advocated that the farming programs should include opportunities to improve farming and farm-family living. However, the practices advocated at that time tended to be for the improvement of productive enterprises on the farm rather than improvement of the farmstead or other aspects of farming.

The definitions given for improvement projects tended to change throughout the years and these changes illustrated the changes in recommendations regarding the breadth of the farming programs.

1915 Improvement project: to make improvement with little hope of immediate return.

1923 Improvement project: the improvement of a project carried the previous year by application of new techniques, different management practices, and others.

1930 (The bulletin on supervised practice in agriculture did not mention improvement projects.)

1944 Improvement project: an undertaking involving a series of jobs designed to improve the appearance and real estate value of the farm and the efficiency of the farm business as a whole and which may contribute to the comfort or convenience of the farm family.

1954 (Same as for 1944)

The recommended content of an individual student's farming program changed considerably from 1914 to 1954. In the early years the recommendations stressed the production projects, and in later years, broader programs. The following outline of recommended content by years summarizes some of those changes:

1911-1916 Home projects to include:
- Production projects
- Demonstration projects
- Improvement projects
- Management projects

1917-1928 Supervised farm practice to include:
- Productive projects
- Improvement projects
- Supplementary farm practices

1929-1940 Supervised farm practice to include:
- Major cash enterprises
- Minor cash enterprises
- Contributory enterprises
- Supplementary farm practices
- Farm mechanics jobs

1941-1954 Supervised farming program to include:
- Production enterprises
- Improvement projects
- Supplementary farm practices
- Farm mechanics jobs

Although there tended to be agreement on the practices advocated within each period regarding the content of the farming programs, the actual content recommended varied considerably from period to period. The practices advocated always included (a) planning by the student to help develop skill in planning, and (b) ownership and/or financial responsibility for the farming program.

Practices were not found dealing in a positive way with the related agricultural occupations as an area for supervised experience programs. The recommended practices were confined to those dealing with experiences in farming through supervised farming programs.

General relationships between present-day concepts, jury reactions, and practices advocated. The reactions of

the jury indicated general agreement with most of the concepts. The practices advocated during the period 1941-1954 were generally in agreement with most of the concepts. The analysis of those concepts for which there was disagreement by the jury, and/or the practices advocated, provided additional insight regarding the concepts and practices advocated.

There seemed to be a difference in the degree to which certain concepts were accepted by the jury and by the degree to which the recommended practices were in agreement those concepts. The five concepts which tended to be supported by the practices advocated, but not supported to the same degree by the jury were as follows:

4. In general, only students with opportunities for farming should be enrolled. (53% Agree; 30% Disagree; 17% Undecided)

5. Students who do not have opportunities for conducting farming programs should not be enrolled in vocational agriculture classes. (60% Agree; 30% Disagree; 10% Undecided)

35. In general, the school should not provide the students with opportunities and facilities required for their individual farming programs. (63% Agree; 20% Disagree; 17% Undecided)

43. The farming programs should provide the students with opportunity to acquire capital which may lead to establishment in farming. (74% Agree; 3% Disagree; 23% Undecided)

46. The students' farming programs should lead toward establishment in farming. (77% Agree; 7% Disagree; 17% Undecided)

For concept number 7, the practices advocated during the period 1941-1954 tended to be in agreement, but the jury reactions were "disagree."

7. In general, students who intend to enter related agricultural occupations should not be enrolled in vocational agriculture classes. (13% Agree; 70% Disagree; 17% Undecided)

The jury reactions tended to be in agreement with concept number 23, but the practices advocated during the period 1941-1954 tended to "disagree." The practices advocated indicated that the vocational choice had already been made by the student, except for possibly determining the type of farming to enter.

23. Instruction in vocational agriculture should assist the youth enrolled in reaching a decision as to vocational choice. (94% Agree; 3% Disagree; 3% Undecided)

The jury reactions on concepts numbered 11 and 49 tended to be quite divided. The practices, related to those two concepts, advocated during the period 1941-1954, tended to be in agreement with the concepts.

11. In general, vocational education in agriculture should not lead to establishment in non-farming positions in agriculture. (47% Agree; 40% Disagree; 13% Undecided)

49. The individual's supervised experience in programs away from school normally should not be planned and carried out in the areas of related agricultural occupations. (43% Agree; 27% Disagree; 30% Undecided)

The practices advocated during the period 1941-1954 tended to agree to a greater extent with the present-day

concepts than the jury. The jury tended to disagree with some of the concepts which were supported by the practices advocated during the period 1941-1954. Perhaps the reactions of the jury indicated more liberal viewpoints than were evident in the practices advocated, as determined by the review of publications.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The purposes of this study were (a) to determine some of the practices advocated by selected national organizations and agencies, during the period covering approximately fifty years preceding 1955, for the development of local programs of vocational education in agriculture in the United States; and (b) to study the relationships between present-day concepts, a jury's reaction to the concepts, and the practices advocated from 1941-1954 for the development of the local programs.

Method Summarized

Sources of information included only the publications from seven organizations and agencies whose leadership functions were primarily national in scope.

A jury of thirty-four men, selected primarily from leaders in the fields of educational administration and agricultural education, was asked to individually record their reactions to each of the forty-nine concepts in an opinionaire. A comparison was made between the present-day concepts, jury reactions, and practices advocated during 1941-1954.

Major emphasis was given to those educational practices advocated to implement an instructional program of vocational education in agriculture in the public secondary schools for high school students.

This study was confined to the leadership role of the seven organizations and agencies as evidenced through official publications and proceedings.

Findings Summarized

Before 1900

The two groups which seemed to give the most attention through publications to agricultural education in the public secondary schools were the U.S. Department of Agriculture and the Association of American Agricultural Colleges and Experiment Stations.

The agricultural education programs which were advocated emphasized the science of agriculture. The course, or courses, were to be taught by a science teacher who had attended an agricultural college. He was to use lectures and textbooks, supplemented by field trips, to teach the course(s) in the theory and practice of agriculture.

1900-1910

During this period many groups advocated agricultural education as a part of the educational programs in

public high schools, but some advocated separate schools for agriculture.

Agriculture was to be introduced as a separate course covering either three or four years. The students taking agriculture were to take a large part of the general education courses required in the high school. The agricultural course was to include such subjects as agronomy, economic botany, and farm management, all organized on a logical basis.

Teachers were urged to utilize school land and other means to have students practice things studied in the classroom. Farm experience programs during the summer by the students on their home farms were advocated in 1910 by Crosby.

1911-1916

Agricultural education in the public secondary schools during this period tended to mean "vocational education in agriculture." The objective most often given was to prepare the students for occupations connected with the work of the farm and farm home. The teacher was to supervise home-project work, direct school agricultural-exhibits, and give instruction in agriculture in the classroom and laboratory. Club activities were advocated by some as a part of the vocational agricultural program.

The home-project method of instruction, with many variations, was advocated. There was lack of agreement regarding the relationship which should exist between the home-project and the classroom instruction.

Several different methods were advocated for determining and organizing the subject matter for instruction. The recommended courses were to cover four years and to use approximately fifty percent of the student's school day.

Farm shop instruction received relatively little attention. Some groups recommended it to be taught as a separate course; others recommended it as an integral part of regular agricultural classes.

1917-1928

The Vocational Education Act, passed in 1917, gave impetus and direction to programs of vocational education in agriculture in the public high schools. Vocational agriculture was for students over fourteen years of age who were in or preparing to enter upon the work of the farm or of the farm home, and was to include classroom instruction, supervised farm practice, some farm shop instruction, and the use of school land.

Emphasis was given to "job analysis" as a method of teaching as well as a method of determining and organizing the instructional material. The cross-sectional method of organizing the four-year courses was advocated.

The Future Farmers of America, as a national organization, was founded in 1928 after development within states over a period of several years, although there were relatively few recommendations from the national groups for agricultural clubs as a part of vocational agriculture.

Two national studies were made of the effectiveness of vocational agricultural programs but practically no recommmendations were made for measuring and evaluating local programs by local people.

1929-1940

A local program of vocational agriculture was to include classroom instruction, supervised farm practice, farm mechanics, and a chapter of Future Farmers of America. The program was to be considered as an integral part of the total educational program in the public high school. The objective given for vocational agriculture was "to train present and prospective farmers for proficiency in farming."

Comprehensive programs of farm practice with considerable emphasis on productive enterprises were recommended for all students enrolled in vocational agriculture. Recommended instructional areas gave emphasis to the development of abilities rather than to the mastery of subject-matter. Job-analysis and farming programs of students were recommended as a basis of determining and organizing teach-

ing units. Teaching units were to include many things besides technical agriculture.

Farm shop instruction was to be a definite part of vocational agriculture although there was lack of agreement as to whether to include it as a separate course, or as an integral part of the entire program.

During this period more leadership was given in the area of measurement and evaluation than in previous periods. Changes in agricultural practices were advocated as one measure of the effectiveness of programs of vocational agriculture.

1941-1954

Educational objectives recommended for vocational agriculture were focused on "preparation for farming." Only students preparing to farm and with adequate facilities for supervised farming were to be enrolled. The local program of vocational education in agriculture, as an integral part of the public school program, was to include classroom instruction, supervised farming programs, farm mechanics instruction, a chapter of Future Farmers of America, and an advisory council.

There was a trend to shift from emphasizing supervised practice, or of farming programs, as a method of teaching to emphasizing methods of developing farming programs.

Methods of determining and organizing instructional units placed emphasis on the psychological rather than the logical approach, and on close coordination with the supervised farming programs.

Farm mechanics instruction, as an integral part of all local programs of vocational agriculture, was to include six areas: farm shop work, farm power and machinery, farm buildings and conveniences, soil and water management, rural electrification, and processing of farm products.

Comprehensive recommendations were made for measuring and evaluating results in local programs of vocational agriculture, and evaluation was recognized to be the joint responsibility of the board of education, school administrators, and teachers of agriculture.

Present-Day Concepts, Jury Reactions and Relationships to Practices Advocated

The reactions of the jury members indicated agreement with most of the forty-nine concepts. The selected leaders in agricultural education tended to be somewhat more in agreement in their reactions to the concepts than the selected leaders in educational administration.

The concept regarding offering most of the on-farm instruction during the summer months was checked "disagree" by more respondents than any other concept. Concepts dealing with (a) related agricultural occupations, (b) who

should be enrolled, and (c) the kind and place of supervised experiences received the most divided reactions.

The practices advocated during the period 1941-1954 were generally in agreement with most of the concepts, although they tended to "disagree" with the concept regarding offering most of the on-farm instruction during the summer months, and the concept regarding vocational agricultural instruction to assist the student in making a vocational choice.

There was a difference in the degree to which some concepts were accepted by the jury and the agreement with those same concepts by the practices advocated during the period 1941-1954.

In general, the practices advocated during the period 1941-1954 tended to agree to a greater extent than did the jury, with the concepts presented in the opinionaire. The reactions of the jury indicated somewhat more liberal viewpoints than were evident in the practices advocated.

Conclusions

The practices advocated by seven selected national organizations and agencies, over a period of more than fifty years, and the relationships between those practices and the reactions of a jury to selected concepts provided the basis for conclusions which have been categorized as follows: (a) practices advocated, (b) relationships between

concepts, jury reactions, and practices advocated, and

(c) general conclusions.

Conclusions based on practices advocated.

1. The national organizations and agencies included in the study exerted active leadership in the development and promotion of programs of vocational education in agriculture as an integral part of the public high school.

2. Practices advocated prior to 1910 were confined to programs which were classified by the author as non-vocational.

3. Many practices advocated during 1911-1916, prior to passage of the Vocational Education Act, were for programs described as vocational.

4. The practices advocated, relating to objectives and enrollment for programs of vocational education in agriculture, tended to become narrower in terms of those to be served and broader in terms of the kinds of educational opportunities to be given to those served.

5. The recommended content of a local program tended to broaden from classroom instruction and home-project work during 1911-1916 to classroom instruction, comprehensive farming programs, farm mechanics, a chapter of Future Farmers of America, and an advisory council during 1941-1954.

6. In general, throughout all of the periods after 1910, programs of vocational education in agriculture were advocated to be an integral part of the public high-school program.

7. The methods of teaching advocated tended to emphasize student participation through various kinds of activities, both mental and physical, except during the early years when the "doing" advocated was primarily manipulative.

8. The methods advocated for determining content for instruction tended to shift from reliance on experts in technical agriculture to the involvement of students, parents, and advisory groups.

9. Four-year programs of agricultural education were quite commonly advocated as early as 1900-1910, and four-year programs of vocational education in agriculture were advocated from the period 1911-1916 through 1954.

10. The methods advocated for organizing subject matter in programs of vocational agriculture tended to shift from a logical to a psychological basis.

11. Supervised practice advocated for vocational agriculture has always tended to include more than a productive project for each student.

12. Prior to the period 1941-1954 relatively few practices were advocated for local schools to use pertaining to measuring and evaluating results of programs of vocational education in agriculture.

13. The instructional areas recommended during the early years were confined primarily to productive phases of farming while in later years they included many things in addition to production.

14. Farm mechanics was not generally advocated as an integral part of all programs of vocational education in agriculture until 1941-1954.

15. The activities of agricultural clubs or Future Farmers of America Charters, when advocated, were always recommended as a method of teaching.

Conclusions based on relationships between concepts, jury reactions, and practices advocated.

1. The jury tended to "agree" with all of the concepts except those dealing with (a) related agricultural occupations, (b) who should be enrolled, (c) the time for offering most of the on-farm instruction, and (d) the kind and place of supervised experiences.

2. The practices advocated during the period 1941-1954 tended to "agree" with all of the concepts except those dealing with (a) the time for offering most of the on-farm instruction, and (b) including instruction to assist students enrolled in making a vocational choice.

General conclusions.

1. Except during the years prior to the passage of the Vocational Education Act the practices advocated for agricultural education in the public high schools tended to be confined to programs designated as vocational education in agriculture.

2. Programs of vocational education in agriculture, according to the practices advocated, have always been intended primarily for those in or desiring to engage in farming.

3. There was a marked shift in the emphasis of practices advocated from those dealing with technical agricultural information in the earlier periods to those dealing with the educational process in the later periods.

4. Agricultural education, especially vocational education in agriculture, tended to be of concern to many more organizations, groups, and agencies in the earlier years than in the later years (as indicated by the topics discussed at meetings and titles of material published).

5. In general, vocational education in agriculture has always been advocated as an integral part of the public high-school program.

6. The reactions of the jury tended to indicate more liberal concepts than did the practices advocated during the period 1941-1954.

7. The practices advocated regarding supervised farming experiences in the early years tended to deal primarily with methods of teaching through the use of the supervised experiences, and, during later years, tended to deal primarily with methods of stimulating the development of farming programs.

8. Since 1917 the Federal Board for Vocational Education (later the U.S. Office of Education, Vocational Division) was the principal source of publications at the national level dealing with vocational education in agriculture.

9. Relatively little leadership was given through official publications to practices for measuring and evaluating results in agricultural education until the period 1941-1954.

10. In general, since 1917 the term "agricultural education" was used to mean "vocational agriculture" rather than a broader concept including several kinds of agricultural education.

Implications

There are several implications which can be drawn from the conclusions of this study. The implications should be of value to all who are active in planning, promoting, and conducting programs of agricultural education in public schools. However, it should be remembered that conclusions were drawn from a study of educational practices advocated by national organizations, groups, and agencies as found in their publications. Many organizations, groups, and agencies confined primarily within a state or region have probably exerted much leadership. Also, the leadership of national organizations, groups, and agencies has been exerted in many ways in addition to their official publications. The following implications have been drawn from within the limitations of this study.

1. If programs of agricultural education should include more than vocational agriculture, the findings of this study indicate that national leadership has not been exerted, through publications, for promotion and development of any except vocational agriculture.

2. If vocational agriculture should be an integral part of public education programs, as indicated by the findings of this study, then there should be active involvement of more national groups rather than fewer for leadership of the program.

3. If vocational agriculture is to serve only those in, or preparing to enter, farming, as indicated by the practices which were advocated, perhaps some consideration should be given by national groups to programs to serve the needs of those preparing to enter agricultural occupations closely related to farming.

4. If the practices advocated by the national groups are somewhat different from the concepts held by other leaders, as indicated by the findings of this study, perhaps better communication is needed between the groups and other leaders.

5. Additional studies should be made to determine (a) practices advocated other than through publications, (b) desirable scope and content of programs of vocational agriculture, and (c) the extent to which teachers and administrators of local programs of vocational agriculture are using the practices advocated.

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APPENDICES

APPENDIX A

LIST OF JURY MEMBERS, MATERIALS SENT TO JURY, AND RESPONSES OF JURY TO CONCEPTS

Names and Addresses of Jury Members

Educational Administration

Dr. William E. Arnold
Division of Education
University of Pennsylvania
Philadelphia, Pennsylvania

Dr. Robert D. Baldwin
College of Education
West Virginia University
Morgantown, West Virginia

Dr. Fred F. Beach
Department of Health, Education, and Welfare
Office of Education
Washington 25, D. C.

Dr. Walter K. Beggs
Teachers College
University of Nebraska
Lincoln, Nebraska

Dr. Clyde M. Campbell
Administrative and Educational Services, School of Education
Michigan State College
East Lansing, Michigan

Dr. Roald F. Campbell
Professor of Education
Ohio State University
Columbus, Ohio

Dr. John E. Gee, Chairman
Department of Education
Bowling Green State University
Bowling Green, Ohio

Dr. Russell T. Gregg
School of Education
University of Wisconsin
Madison, Wisconsin

Dr. Calvin Grieder
College of Education
University of Colorado
Boulder, Colorado

Dr. Roe Lyell Johns, Head
Administration and Field Service
University of Florida
Gainesville, Florida

Dr. Leighton H. Johnson
School of Education
University of New Mexico
Albuquerque, New Mexico

Dr. Harold E. Moore
School of Education
University of Denver
Denver 10, Colorado

Dr. Edgar L. Morphet
School of Education
University of California
Berkeley, California

Dr. Paul R. Mort
Professor of Education, Teachers College
Columbia University
525 West 120th Street
New York 27, New York

Dr. Clarence Pound
Division of Education
Purdue University
Lafayette, Indiana

Dr. Maurice E. Stapley
School of Education
Indiana University
Bloomington, Indiana

Dr. Perry Van Miller
College of Education
University of Illinois
Urbana, Illinois

Names and Addresses of Jury Members

Agricultural Education

Dr. Henry S. Brunner, Head
Department of Agricultural Education
Pennsylvania State University
State College, Pennsylvania

Dr. Harold M. Byram
Department of Vocational Education
School of Education, Michigan State College
East Lansing, Michigan

Dr. R. W. Cline
Agricultural Education
University of Arizona
Tucson, Arizona

Dr. George P. Deyoe
Agricultural Education Department
103 Gregory Hall, University of Illinois
Urbana, Illinois

Dr. George F. Ekstrom
Agricultural Education
University of Missouri
Columbia, Missouri

Dr. Carsie Hammonds, Head Teacher Trainer
College of Education
University of Kentucky
Lexington 29, Kentucky

Dr. T. J. Horne, Head
Department of Agricultural Education
Virginia Polytechnic Institute
Blacksburg, Virginia

Mr. D. C. Jones
Agricultural Education
Langston University
Langston, Oklahoma

Dr. John B. McClelland
Agricultural Education
Iowa State College
Ames, Iowa

Dr. V. G. Martin, Head Teacher Trainer
Agricultural Education Department
Mississippi State College
State College, Mississippi

Dr. W. Howard Martin
Agricultural Education
University of Connecticut
Storrs, Connecticut

Dr. R. W. Montgomery
Agricultural Education
105 Thach Hall, Alabama Polytechnic Institute
Auburn, Alabama

Mr. Mark Nichols
State Department of Public Instruction
Salt Lake City, Utah

Dr. E. M. Norris
Agricultural Education
Prairie View A. and M. College
Prairie View, Texas

Dr. C. C. Scarborough, Head
Department of Agricultural Education
North Carolina State College
Raleigh, North Carolina

Mr. Sidney S. Sutherland, Head Teacher Trainer
Agricultural Education
College of Agriculture, University of California
Davis, California

Dr. A. W. Tenney
Department of Health, Education, and Welfare
Office of Education
Washington 25, D. C.

Copy of the Letter Sent to Leaders
in Educational Administration

902-C Cherry Lane
East Lansing, Michigan
March 4, 1955

_____
_____
_____
_____

Dear _____

As a part of a doctoral study at Michigan State College, I am attempting to determine whether certain concepts for vocational education in agriculture are held by leaders in the field of agricultural education and in school administration. My guidance committee members have agreed that you are one of the present-day leaders in the field of school administration.

Will you cooperate in the study by completing the enclosed opinionaire? The instructions have been attached to the opinionaire and I have found by previous trials that it will take approximately twenty minutes to complete the form.

A self-addressed envelope has been enclosed for your convenience in returning the form to my by April 7, 1955, if possible.

Sincerely yours,

Don Meaders

Copy of the Letter Sent to Leaders
in Agricultural Education

902-C Cherry Lane
East Lansing, Michigan
March 4, 1955

_____
_____
_____
_____

Dear _____

As a part of a doctoral study at Michigan State College, I am attempting to determine whether certain concepts for vocational education in agriculture are held by leaders in the field of agricultural education and in school administration. My guidance committee members have agreed that you are one of the present-day leaders in the field of agricultural education.

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A self-addressed envelope has been enclosed for your convenience in returning the form to me by April 7, 1955, if possible.

Sincerely yours,

Don Meaders

Copy of Instructions for Checking Concepts

INSTRUCTIONS FOR CHECKING CONCEPTS

Background of Study

This is a study of the practices which have been advocated for implementing and improving local programs of vocational education in agriculture. Vocational education has adopted the trademark of "learning by doing," but the "kinds of doing" are usually rather vaguely defined. Many "kinds of doing" have probably been advocated in the past just as there are many different practices advocated today. Consequently, this study is being made to try to clarify the meaning of the phrase "learning by doing" for vocational education in agriculture in terms of the "kinds of doing."

The Concepts

The concepts which have been included are believed to be held by present-day leaders. They have been divided into three main areas with each area further divided into two parts, method and content. If the concept seems to refer to how to implement or improve a local program, it has been classified under method. If it seems to refer to what to include in the program, it has been classified under content. It is recognized that some concepts definitely refer to both method and content, but all have been arbitrarily placed in one or the other of the two classifications.

Specific Instructions

As a member of the jury you are asked to carefully read the various concepts and to check your reaction to each concept in the space provided. The following statements may serve as a guide to your interpretation of the concepts.

1. The concepts are for present-day vocational education in agriculture as it applies to the students enrolled in high-school courses. (Excludes young and adult-farmer programs.)
2. The concepts are intended to be broad enough to include all phases of the vocational agriculture program for high school students. (Classwork, shopwork, supervised farming programs, and Future Farmers of America chapters.)

3. Should has been underscored in each concept to emphasize that the concept is believed to be more commonly accepted than some other concept. It does not mean that the ideal program is represented by the application of those particular concepts, but rather the programs currently being advocated by the leaders tend to utilize those concepts.
4. Add any other concepts or suggest changes in the space provided on the last page or wherever seems most convenient.

Copy of Concepts Submitted to Jury Members

Present-Day Concepts for Vocational Education in Agriculture for Students in Public Secondary Schools

Place a (✓) in the blank which most nearly reflects your reaction to the stated concept. (A = Agree, D = Disagree, U = Undecided)

GENERAL

A D U Method of Implementing Local Program:

- - - 1. In general, students enrolled in vocational agriculture should live on farms.
- - - 2. Under special conditions non-farm students may be enrolled.
- - - 3. Vocational education in agriculture should be available to all farm boys.
- - - 4. In general, only students with opportunities for farming should be enrolled.
- - - 5. Students who do not have opportunities for conducting farming programs should not be enrolled in vocational agriculture classes.
- - - 6. Farm placement service should be provided by the school.
- - - 7. In general, students who intend to enter related agricultural occupations should not be enrolled in vocational agriculture classes.

Content of Local Program:

- - - 8. Vocational education in agriculture should share in the total responsibility for meeting needs served by public education.
- - - 9. Instruction in vocational agriculture should help students function effectively as citizens in a democracy.
- - - 10. Those enrolled should develop the ability to adjust to continuing changes in technology.

- - - 11. In general, vocational education in agriculture should not lead to establishment in non-farming positions in agriculture.

- - - 12. Vocational education in agriculture should contribute to the personal growth and development of the individuals enrolled.

ORGANIZED INSTRUCTION

Method of Implementing Local Program

- - - 13. The teacher should give both group and individual instruction.

- - - 14. Studies of farming in the community should be made as a partial basis for identifying instructional needs.

- - - 15. Class groups and advisory groups should be utilized in checking or making a determination of needs.

- - - 16. Sources from outside of the school community may have to be utilized to secure a more nearly adequate indication of needs to be met through the local program of vocational education in agriculture.

- - - 17. An individual's needs for specific instruction in agriculture should be determined from a study of his farming situation.

- - - 18. Student-teacher planning should be developed.

- - - 19. Interests of students, intelligence, maturity, experience, aspiration level, and other factors should be recognized in defining instructional needs.

- - - 20. On the basis of recognized needs, individuals and groups should be helped by the teacher and others to establish their own goals.

- - - 21. Most of the on-farm instruction may properly be offered during the summer months when school is not in session.

- - - 22. The farming program should be regarded as a basis for effective instruction.

Content of Local Program:

- - - 23. Instruction in vocational agriculture should assist the youth enrolled in reaching a decision as to vocational choice.

- - - 24. Instruction in vocational agriculture should be directed to develop an individual's abilities to get along with others and function as a member of groups.

- - - 25. The problems which individuals have in conducting their farming programs should be a major guide to selecting learning experiences for class instruction.

- - - 26. Instruction in vocational agriculture should lead to the development of abilities required for success in the position of farm operator.

- - - 27. Instruction in vocational agriculture for those who are not established as farm operators should emphasize contributions to success in the particular agricultural position which the individual occupies.

- - - 28. Instruction should be directed to helping individuals solve problems as they are encountered.

- - - 29. Cooperative activities should be included for all students enrolled in vocational agriculture.

- - - 30. The needs revealed from the standpoint of society should be recognized as of major concern to vocational education in agriculture.

- - - 31. Instruction in vocational agriculture should help students develop the ability to set realistic goals and to reach those goals.

- - - 32. Vocational education in agriculture should be primarily concerned with goals relating to efficiency in farming.

- - - 33. Instruction in vocational agriculture should help develop managerial ability in the students enrolled.

- - - 34. Instruction in vocational agriculture should help develop individual abilities in evaluating opportunities.

FARMING PROGRAMS

Method of Implementing:

- - - 35. In general, the school should not provide the students with opportunities and facilities required for their individual farming programs.

- - - 36. Farming activities conducted as a part of the student's vocational agriculture program should be carried out chiefly on the home farm from which the student comes.

- - - 37. Selection and planning of farming programs with the students should involve counsel with parents, teachers and others.

- - - 38. The conditions of continuity and growth in farming programs should be sought to insure a progressive learning experience and to insure maximum progress toward establishment in farming.

- - - 39. Farm visits should be made to students at crucial times in their farming programs.

Content of Local Program:

- - - 40. Teachers of vocational agriculture should assist individuals with the selection and evaluation of their farming programs.

- - - 41. The farming programs should provide the students with opportunities for exploratory experiences in various enterprises.

- - - 42. The farming programs should provide the students with opportunities to acquire experience which will lead to establishment in farming.

- - - 43. The farming programs should provide the students with the opportunity to acquire capital which may lead to establishment in farming.

- - - 44. The farming programs should provide the students with opportunities to improve farming and farm-family living.

- - - 45. The farming programs should provide the students with opportunities to develop skill in planning farming operations.

- - - 46. The students' farming programs should lead toward establishment in farming.

- - - 47. The farming programs should be broad and comprehensive in order that learning experiences may be broad and comprehensive.

- - - 48. A student's farming program usually should include productive projects partially or entirely owned by the student.

- - - 49. The individual's supervised experience in programs away from school normally should not be planned and carried out in the areas of related agricultural occupations.

Responses Given by Members of Jury to Concepts

(Numbers indicate total number of respondents who checked that blank; A = Agree; D = Disagree; U = Undecided)

GENERAL

A	D	U	
			Method of Implementing Local Program:
26	2	2	1. In general, students enrolled in vocational agriculture should live on farms.
29	0	1	2. Under special conditions non-farm students may be enrolled.
27	1	2	3. Vocational education in agriculture should be available to all farm boys.
16	9	5	4. In general, only students with opportunities for farming should be enrolled.
18	9	3	5. Students who do not have opportunities for conducting farming programs should not be enrolled in vocational agriculture classes.
22	3	5	6. Farm placement service should be provided by the school.
4	21	5	7. In general, students who intend to enter related agricultural occupations should not be enrolled in vocational agriculture classes.
			Content of Local Program:
28	2	0	8. Vocational education in agriculture should share in the total responsibility for meeting needs served by public education.
30	0	0	9. Instruction in vocational agriculture should help students function effectively as citizens in a democracy.
30	0	0	10. Those enrolled should develop the ability to adjust to continuing changes in technology.
14	12	4	11. In general, vocational education in agriculture should not lead to establishment in non-farming positions in agriculture.

30 0 0 12. Vocational education in agriculture should contribute to the personal growth and development of the individuals enrolled.

ORGANIZED INSTRUCTION

Method of Implementing Local Program:

30 0 0 13. The teacher should give both group and individual instruction.

30 0 0 14. Studies of farming in the community should be made as a partial basis for identifying instructional needs.

30 0 0 15. Class groups and advisory groups should be utilized in checking or making a determination of needs.

27 2 1 16. Sources from outside of the school community may have to be utilized to secure a more nearly adequate indication of needs to be met through the local program of vocational education in agriculture.

22 6 2 17. An individual's needs for specific instruction in agriculture should be determined from a study of his farming situation.

30 0 0 18. Student-teacher planning should be developed.

30 0 0 19. Interests of students, intelligence, maturity, experience, aspiration level, and other factors should be recognized in defining instructional needs.

30 0 0 20. On the basis of recognized needs, individuals and groups should be helped by the teacher and others to establish their own goals.

8 16 6 21. Most of the on-farm instruction may properly be offered during the summer months when school is not in session.

29 0 1 22. The farming program should be regarded as a basis for effective instruction.

Content of Local Program:

28 1 1 23. Instruction in vocational agriculture should assist the youth enrolled in reaching a decision as to vocational choice.

30 0 0 24. Instruction in vocational agriculture should be directed to develop an individual's abilities to get along with others and function as a member of groups.

28 0 2 25. The problems which individuals have in conducting their farming programs should be a major guide to selecting learning experiences for class instruction.

29 0 1 26. Instruction in vocational agriculture should lead to the development of abilities required for success in the position of farm operator.

19 6 5 27. Instruction in vocational agriculture for those who are not established as farm operators should emphasize contributions to success in the particular agricultural position which the individual occupies.

29 1 0 28. Instruction should be directed to helping individuals solve problems as they are encountered.

30 0 0 29. Cooperative activities should be included for all students enrolled in vocational agriculture.

25 1 4 30. The needs revealed from the standpoint of society should be recognized as of major concern to vocational education in agriculture.

30 0 0 31. Instruction in vocational agriculture should help students develop the ability to set realistic goals and to reach those goals.

22 5 3 32. Vocational education in agriculture should be primarily concerned with goals relating to efficiency in farming.

29 0 1 33. Instruction in vocational agriculture should help develop managerial ability in the students enrolled.

30 0 0 34. Instruction in vocational agriculture should help develop individual abilities in evaluating opportunities.

FARMING PROGRAMS

Method of Implementing:

19 6 5 35. In general, the school should not provide the students with opportunities and facilities required for their individual farming programs.

25 2 3 36. Farming activities conducted as a part of the student's vocational agriculture program should be carried out chiefly on the home farm from which the student comes.

30 0 0 37. Selection and planning of farming programs with the students should involve counsel with parents, teachers and others.

28 1 1 38. The conditions of continuity and growth in farming programs should be sought to insure a progressive learning experience and to insure maximum progress toward establishment in farming.

30 0 0 39. Farm visits should be made to students at crucial times in their farming programs.

Content of Local Program:

30 0 0 40. Teachers of vocational agriculture should assist individuals with the selection and evaluation of their farming programs.

27 0 3 41. The farming programs should provide the students with opportunities for exploratory experiences in various enterprises.

28 0 2 42. The farming programs should provide the students with opportunities to acquire experience which will lead to establishment in farming.

22 1 7 43. The farming programs should provide the students with opportunity to acquire capital which may lead to establishment in farming.

30 0 0 44. The farming programs should provide the students with opportunities to improve farming and farm-family living.

30 0 0 45. The farming programs should provide the students with opportunities to develop skill in planning farming operations.

23 2 5 46. The students' farming programs should lead toward establishment in farming.

25 2 3 47. The farming programs should be broad and comprehensive in order that learning experiences may be broad and comprehensive.

26 1 3 48. A student's farming program usually should include productive projects partially or entirely owned by the student.

13 8 9 49. The individual's supervised experience in programs away from school normally should not be planned and carried out in the areas of related agricultural occupations.

APPENDIX B

CHRONOLOGICAL LISTING OF SELECTED MATERIALS REVIEWED FROM THE U. S. DEPARTMENT OF AGRICULTURE

Agricultural Reports of the Patent Office, and Annual Reports of the Commissioner of Agriculture and the Secretary of Agriculture

Year	Author, Title, Pages
1849	Lee, Daniel, "Agricultural Education," pp. 6-9.
1850	Lee, Daniel, "Agricultural Education," pp. 145-148.
1851	Dodge, Harvey, "Agricultural Education," pp. 19-30. Braman, Milton, "Agricultural Education," pp. 31-37. Turner, J.B., "Plan for an Industrial University," pp. 37-44. "Common Schools in the United States," pp. 44-45.
1852	Lee, Daniel, "Progress of Agriculture in the United States," pp. 1-15.
1857	Browne, D.J., "Encouragement of Agriculture in the United States," pp. 13-50.
1859	Browne, D.J., "Elementary and Practical Education, Considered in Connection with the Primary and Agricultural Schools of the United States," pp. 1-14.
1863	Adams, L.B., "Farmers' Boys," pp. 307-313.
1865	French, Henry F., "Agricultural Colleges," pp. 137-186.
1892	Harris, A.W., "Association of American Agricultural Colleges and Experiment Stations," pp. 527-530.
1893	True, A.C., "The Wisconsin Dairy School," pp. 449-450.
1898	"Nature-Teaching in the Common Schools," pp. XVI-XVII.
1899	"Agricultural Education," pp. LXVI-LXX. True, A.C., "Association of American Agricultural Colleges and Experiment Stations," pp. 127-128.
1900	True, A.C., "American Institutions for Agricultural Education," pp. 174-177.
1901	True, A.C., "Secondary and Elementary Schools," pp. 192-193.

1902 "Improvement of Rural Schools," pp. XCIX-C.
"Secondary and Elementary Schools of Agriculture," pp. CI-CII.
"Secondary and Elementary Schools," pp. 255-256.

1903 "Secondary and Elementary Schools of Agriculture," pp. LXXXVI-LXXXVII.
"American Institutions for Agricultural Education," pp. 256-262.

1904 "Secondary and Elementary Schools," pp. XCVII-XCVIII.
"American Institutions for Agricultural Education," pp. 457-463.

1905 "Promotion of Agricultural Education," p. CXXV.
"Relations with Institutions for Agricultural Education," pp. 443-447.

1906 "The Agricultural Colleges and Schools," pp. 87-88.
True, A.C., "Relations with Institutions for Agricultural Education," pp. 562-567.

1907 "The Agricultural Colleges and Schools," pp. 118-119.
True, A.C., "Relations with Institutions for Agricultural Education," pp. 655-660.

1908 "The Agricultural Colleges and Schools," pp. 132-134.
"Agricultural Education," pp. 177-178.
True, A.C., "Relations with Institutions for Agricultural Education," pp. 719-722.

1909 "Agricultural Colleges and Schools," pp. 135-136.

1910 "The Agricultural Colleges and Schools," pp. 142-143.
True, A.C., "Relations with Institutions for Agricultural Education," pp. 739-742.

1911 "The Agricultural Colleges and Schools," pp. 139-140.
True, A.C., "Relations with Institutions for Agricultural Education," pp. 688-692.

1912 "Agricultural Education," pp. 214-215.
"Educational Sets of Soil Samples," p. 611.
True, A.C., "Relations with Institutions for Agricultural Education," pp. 823-826.

1913 "Agricultural Education," p. 53.
True, A.C., "Relations with Institutions for Agricultural Education," pp. 272-274.

1914 True, A.C., "Relations with Institutions for Agricultural Education," pp. 256-258.

1915 True, A.C., "Relations with Agricultural Schools," pp. 297-298.

1916 Lane, C.H., "Investigations on Agricultural Instruction in Schools," pp. 300-302.
Smith, C.B., "Boys' and Girls' Club Work," pp. 323-324.

1917 Lane, C.H., "Investigations on Agricultural Instruction in Schools," pp. 326-328.
"Extension Work through Boys' Agricultural Clubs," pp. 342-343.

1918 Dille, Alvin, "Investigations on Agricultural Instruction in Schools," pp. 339-342.

1919 Dille, Alvin, "Investigations on Agricultural Instruction in Schools," pp. 357-358.

1920 Shinn, Erwin H., "Investigations on Agricultural Instruction in Schools," pp. 450-452.

1921 Shinn, Erwin H., "Investigations on Agricultural Instruction in Schools," pp. 10-12.*

1922 Shinn, Erwin H., "Investigations on Agricultural Instruction in Schools," pp. 417-420.

1923 "Agricultural Education," pp. 565-567.
Shinn, Erwin H., "Investigations on Agricultural Instruction in Schools," pp. 575-578.

*No combined report was issued in 1921. This material was found in Report of the Director of the States Relations Service for the fiscal year ended June 30, 1921.

Bulletins of the Office of the Experiment Stations

Year	Bulletin No.	Author, Title, Pages
1889	Misc. 1	Harris, A.W., and Alvord, H.E., editors, Proceedings of the Second Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, January 1-3, 1889, 123 pp.
1889	Misc. 2	Harris, A.W., and Alvord, H.E., editors, Proceedings of the Third Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 12-15, 1889, 142 pp.
1891	Misc. 3	Harris, A.W., and Alvord, H.E., editors, Proceedings of the Fourth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 11-13, 1890, 156 pp.
1892	7	Harris, A.W., and Alvord, H.E., editors, Proceedings of the Fifth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, August 12-18, 1891, 113 pp.
1893	16	Harris, A.W., and Alvord, H.E., editors, Proceedings of the Sixth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 15-19, 1892, 176 pp.
1894	20	True, A.C., and Alvord, H.E., editors, Proceedings of the Seventh Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, October 17-19, 1893, 100 pp.
1895	24	True, A.C., and Goodell, H.H., editors, Proceedings of the Eighth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 13-15, 1894, 98 pp.

1896 30 True, A.C., and Goodell, H.H., editors, Proceedings of the Ninth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, July 16-18, 1895, 100 pp.

1897 41 True, A.C., and Goodell, H.H., editors, Proceedings of the Tenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 10-12, 1896, 120 pp.

1898 49 True, A.C., and Goodell, H.H., editors, Proceedings of the Eleventh Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, July 13-15, 1897, 100 pp.

1899 65 True, A.C., Beal, W.H., and Goodell, H.H., editors, Proceedings of the Twelfth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 15-17, 1898, 138 pp.

1900 76 True, A.C., Beal, W.H., and Goodell, H.H., editors, Proceedings of the Thirteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, July 5-7, 1899, 112 pp.

1901 99 True, A.C., Beal, W.H., and Goodell, H.H., editors, Proceedings of the Fourteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 13-15, 1900, 192 pp.

1902 115 True, A.C., Beal, W.H., and Goodell, H.H., editors, Proceedings of the Fifteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 12-14, 1901, 134 pp.

120 True, A.C., Crosby, D.J., and Creelman, G.C., editors, Proceedings of the Seventh Annual Meeting of the American Association of Farmers' Institute Workers, June 24-26, 1902, 119 pp.

1903 123 True, A.C., Beal, W.H., and White, H.C., editors, Proceedings of the Sixteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, October 7-9, 1902, 144 pp.

1904 142 True, A.C., Beal, W.H., and White, H.C., editors, Proceedings of the Seventeenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 17-19, 1903, 196 pp.

1905 153 True, A.C., Beal, W.H., and White, H.C., editors, Proceedings of the Eighteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 1-3, 1904, 138 pp.

160 Galloway, B.T., School Gardens, 47 pp.

1906 164 True, A.C., Beal, W.H., and White, H.C., editors, Proceedings of the Nineteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 14-16, 1905, 189 pp.

165 Beal, W.H., Hamilton, John, and Creelman. G.C., editors, Proceedings of the Tenth Annual Meeting of the American Association of Farmers' Institute Workers, November 9-11, 1905, 95 pp.

1907 184 True, A.C., Beal, W.H., and White, H.C., editors, Proceedings of the Twentieth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 14-16, 1906, 132 pp.

186 Crosby, Dick J., Exercises in Elementary Agriculture: Plant Production, 64 pp.

196 True, A.C., Beal, W.H., and White, H.C., editors, Proceedings of the Twenty-First Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, May 28-30, 1907, 114 pp.

1908 195 Hatch, K.L., Simple Exercises Illustrating Some Applications of Chemistry to Agriculture, 22 pp.

199 Beal, W.H., and Hamilton, John, editors, Proceedings of the Twelfth Annual Meeting of the American Association of Farmers' Institute Workers, October 23-24, 1907, 79 pp.

1909	212	True, A.C., Beal, W.H., and White, H.C., editors, Proceedings of the Twenty-Second Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, November 18-20, 1908, 122 pp.
	213	Beal, W.H., and Hamilton, John, editors, Proceedings of the Thirteenth Annual Meeting of the American Association of Farmers' Institute Workers, November 16-17, 1908, 73 pp.
	220	Owens, C.J., Secondary Agricultural Education in Alabama, 30 pp.
1910	228	True, A.C., Beal, W.H., and Thompson, W.O., editors, Proceedings of the Twenty-Third Annual Convention of the Association of American Agricultural Colleges and Experiment Stations, August 18-20, 1909, 124 pp.
	231	Hamilton, John, editor, College Extension in Agriculture, 86 pp.
1911	242	Johnson, A.A., County Schools of Agriculture and Domestic Economy in Wisconsin, 24 pp.
1912	250	Lane, C.H., Arkansas State Agricultural Schools, 20 pp.
1913	255	Christie, George I., Educational Contests in Agriculture and Home Economics, 47 pp.

Note: No. 256 was the last of this series.

Circulars of the Office of the Experiment Stations

Year	Circular No.	Author, Title, Pages
1896	32	Report of the Committee on Methods of Teaching Agriculture.
1897	37	Second Report of the Committee on Methods of Teaching Agriculture, 4 pp.
1898	39	Third Report of the Committee on Methods of Teaching Agriculture, 7 pp.
1899	41	Fourth Report of the Committee on Methods of Teaching Agriculture, 7 pp.
1901	45	Fifth Report of the Committee on Methods of Teaching Agriculture, 8 pp.
1902	49	Secondary Courses in Agriculture, 10 pp.
1904	60	True, A.C., and others, The Teaching of Agriculture in the Rural Common School, 20 pp.
1907	73	Hays, W.M., Country Life Education, 13 pp.
	77	True, A.C., and others, A Secondary Course in Agronomy, 43 pp.
1908	77	True, A.C., and others, A Secondary Course in Agronomy. revised, 44 pp.
	79	Hamilton, John, Form of Organization for Movable Schools of Agriculture, 8 pp.
1909	83	True, A.C., and Crosby, Dick J., The American System of Agricultural Education, 27 pp.
	84	Hays, Willet M., Education for Country Life, 40 pp.
	90	Abbey, M.J., Normal School Instruction in Agriculture, 31 pp.
	91	True, A.C., Secondary Education in Agriculture in the United States, 11 pp.
1910	93	Organization, Work, and Publications of the Agricultural Education Service, 15 pp.
	94	Crosby, D.J., and Howe, F.W., Free Publications of the Department of Agriculture Classified for the Use of Teachers, 29 pp.
	96	Howe, F.W., How to Test Seed Corn in School, 7 pp.

	98	Hamilton, John, Progress in Agricultural Education Extension, 12 pp.
	99	Hamilton, John, and Stedman, J.M., Farmers' Institutes for Young People, 40 pp.
1911	100	Smith, H.R., Secondary Education Course in Animal Production, 56 pp.
	106	True, A.C., and Crosby, Dick J., The American System of Agricultural Education, 28 pp.
	109	Hamilton, John, Agricultural Fair Associations and Their Utilization in Agricultural Education and Improvement, 23 pp.
1912	106	True, A.C., and Crosby, D.J., The American System of Agricultural Education, revised, 31 pp.
	115	True, A.C., and others, Report of the Committee on Instruction in Agriculture, 1911, 19 pp.
	117	Ellis, D.C., A Working Erosion Model for Schools, 11 pp.
1913	118	True, A.C., The Work of the Agricultural Colleges in Training Teachers of Agriculture for Secondary Schools, 29 pp.

Note: No. 118 was the last of this series.

Proceedings of the Association of Land-Grant Colleges and Universities

Year	No. of Annual Convention	Author, Title, Pages
1885		Colman, Norman J., "Address to the Convention of Delegates," Miscellaneous Special Report No. 9:5-15. Adams, F.G., "Agriculture in Common Schools," Miscellaneous Special Report No. 9:174-187.
1892	6	"Discussion on Improving Agricultural Education," Office of Experiment Stations, Bulletin No. 16:52-58. Brown, William L., "President's Annual Report," Office of Experiment Stations, Bulletin No. 16:58-66. Hays, W.M., "Advances in Agricultural Education," Office of Experiment Stations, Bulletin No. 16:132-138.
1894	8	Harris, W.T., "The Teaching of Agriculture," Office of Experiment Stations, Bulletin No. 24:43-46.
1895	9	"Discussion of Methods of Instruction in Teaching Agriculture," Office of Experiment Stations, Bulletin No. 30:35-42.
1896	10	Hamilton, John, "Agricultural Education," Office of Experiment Stations, Bulletin No. 41:48-52. True, A.C., "Report of Committee on Methods of Teaching Agriculture," Office of Experiment Stations, Bulletin No. 41:57-58.
1897	11	True, A.C., "Second Report of the Committee on Methods of Teaching Agriculture," Office of Experiment Stations, Bulletin No. 49:29-32. Fairchild, G.T., "Evolution of Agricultural Education," Office of Experiment Stations, Bulletin No. 49:32-38.
1898	12	"Resolution on Agricultural Education in Public Schools," Office of Experiment Stations, Bulletin No. 65:50.

True, A.C., "Third Report of Committee on Methods of Teaching Agriculture," Office of Experiment Stations, Bulletin No. 65: 79-84.

1899 13 Liggett, W.M., "Agricultural Education--Practical and Scientific," Office of Experiment Stations, Bulletin No. 76:48-52.
Coates, C.E., Jr., "The Principles Underlying the Formation of an Agricultural Course in the South," Office of Experiment Stations, Bulletin No. 76:59-64.
Roberts, I.P., "The Principles Underlying the Formation of an Agricultural Course in the East," Office of Experiment Stations, Bulletin No. 76:65-66.

1902 16 Liggett, W.M., "Address of the President of the Association," Office of Experiment Stations, Bulletin No. 123:29-37.
True, A.C., "Methods of Teaching Agriculture," Office of Experiment Stations, Bulletin No. 123:45-52.
"Discussion on the Graduate School of Agriculture as a Means of Improving the Pedagogical Form of Courses in Agriculture," Office of Experiment Stations, Bulletin No. 123:61-67.
Hardy, J.C., "Agricultural Education in the South," Office of Experiment Stations, Bulletin No. 123:67-73.

1903 17 Metcalf, H., "The Foundations of Agricultural Teaching," Office of Experiment Stations, Bulletin No. 142:170-172.

1904 18 French, H.T., "Methods of Teaching Agriculture--The Teaching of Agriculture in the Rural Schools," Office of Experiment Stations, Bulletin No. 153:43-56.
Butterfield, K.L., "The Social Phase of Agricultural Education," Office of Experiment Stations, Bulletin No. 153:56-61.

1905 19 "Resolution Regarding a Department of Agricultural Education in the National Educational Association," Office of Experiment Stations, Bulletin No. 164:28, 47.
True, A.C., "Report of Committee on Methods of Teaching Agriculture," Office of Experiment Stations, Bulletin No. 164:37-38.

Harris, W.T., "Language Study as Preparation for Scientific Study," Office of Experiment Stations, Bulletin No. 164:102-106.

True, A.C., "The Land-Grant Colleges and the Public Schools," Office of Experiment Stations, Bulletin No. 164:124-126.

1906 20

"Department of Agricultural Education in the National Educational Association," Office of Experiment Stations, Bulletin No. 184:19.

True, A.C., "Report of Committee on Instruction in Agriculture," Office of Experiment Stations, Bulletin No. 184:46-47.

1907 21

True, A.C., "Report of Committee on Instruction in Agriculture," Office of Experiment Stations, Bulletin No. 196:37-38.

Brown, Elmer E., "Development of Agricultural Education," Office of Experiment Stations, Bulletin No. 196:49-54.

1908 22

True, A.C., "Report of Committee on the History of Agricultural Education," Office of Experiment Stations, Bulletin No. 212:30-31.

True, A.C., "Report of Committee on Instruction in Agriculture," Office of Experiment Stations, Bulletin No. 212:35-38.

1909 23

True, A.C., "Secondary Education in Agriculture in the United States," Office of Experiment Stations, Bulletin No. 228:17-19.

"Discussion on Secondary Education in Agriculture in the United States," Office of Experiment Stations, Bulletin No. 228:19-24.

Bailey, L.H., "The Better Preparation of Men for College and Station Work," Office of Experiment Stations, Bulletin No. 228: 25-32.

True, A.C., "Report of Committee on History of Agricultural Education," Office of Experiment Stations, Bulletin No. 228:40-41.

Burnett, E.A., "The Function of the Land-Grant College in Promoting Agricultural Education in Secondary Schools," Office of Experiment Stations, Bulletin No. 228: 87-93.

Davenport, E., "Secondary Education in Agriculture," Office of Experiment Stations, Bulletin No. 228:93-94.

1910 24 "Resolution Concerning Federal Aid for Education in Agriculture in Secondary Schools," pp. 105-106, 120-121.
Crosby, D.J., "The Correlation of Secondary and Short Courses with the Four Years' Course," pp. 137-140.
"Discussion on Correlation of Secondary and Short Courses with the Four Years' Course," pp. 140-143.

1911 25 Claxton, P.P., "Agricultural Education," pp. 60-67.
Claxton, P.P., "Legislation for Agricultural Education," pp. 89-94.

1912 26 True, A.C., "Report of the Committee on Instruction in Agriculture--The Work of the Agricultural Colleges in Training Teachers of Agriculture for Secondary Schools," pp. 19-42.
True, A.C., "The United States Department of Agriculture, 1862-1912," pp. 70-80.
"Round Table Discussion: What the Extension Department Can Do to Forward Industrial Education in the Public Schools," pp. 223-226.

1913 27 Bessey, C.E., "Instruction in Pure Science for Agricultural Students," pp. 213-218.

1914 28 True, A.C., "Annual Presidential Address," pp. 86-96.
"Discussion of the Hughes Educational Bill," pp. 156-162.
Fairchild, E.T., "The Relation of the Agricultural College to School Instruction in Agriculture and Home Economics," pp. 164-169.
"Discussion of the Relation of the Agricultural College to School Instruction in Agriculture and Home Economics," pp. 169-176.

1915 29 Hill, A. Ross, "The Preparation of Teachers as Contemplated in the Nelson Amendment," pp. 96-100.

1916	30	True, A.C., "Report of Committee on Instruction in Agriculture--Relations of High School Agriculture to Agriculture as Taught in the Land-Grant Colleges," pp. 64-89.
1917	31	True, A.C., "Report of Committee on Instruction in Agriculture," pp. 23-26. Prosser, C.A., "The Smith-Hughes Act and the Land-Grant Colleges," pp. 79-84. Hawkins, L.S., "The Smith-Hughes Act: The Training of Vocational Teachers in Agriculture," pp. 84-90.
1919	33	True, A.C., "Report of Committee on Instruction in Agriculture, Home Economics and Mechanic Arts: The Training of Vocational Teachers under the Smith-Hughes Act," pp. 110-127.
1920	34	Hawkins, L.S., "Training Teachers of Vocational Agriculture through the Land-Grant Colleges," pp. 159-162. Mann, A.R., "The Opportunity of the Land-Grant College in the Preparation of Teachers of Vocational and Secondary Agriculture," pp. 162-166.
1921	35	Mann, A.R., "Report of Joint Committees on Relationships between Extension and Vocational Education Forces in the Various States," pp. 232-240.
1923	37	"The Status of Vocational Courses in Agriculture in High Schools," pp. 101-110. "The Relation of the Land-Grant Colleges to Rural School Improvement," pp. 110-114. Lane, C.H., "The Status of Vocational Teacher-Training in Land-Grant Colleges," pp. 178-189.
1924	38	Miller, M.F., "Some Results from Applying the Principles of Job Analysis to Agricultural Teaching," pp. 191-196.
1925	39	Johnson, Edward C., "Some Major Objectives in Agricultural Education," pp. 118-124.
1928	42	True, A.C., "Scientific and Technical Societies Dealing with Agriculture and Related Subjects," pp. 37-58.

1931	45	Field, A.M., "Relation of High Schools to Colleges of Agriculture and Particularly the Curricular Adjustments," pp. 195-204. Stewart, R.M., "Discussion of Paper Presented by Dr. Field," pp. 204-212.
1932	46	Crist, John W., "The All-Time Function of Agricultural Education," pp. 208-227.
1933	47	Futrall, J.C., "Development of Agricultural Education," pp. 28-34.
1934	48	Kildee, H.H., and Hamlin, H.M., "Correlating the Work of Agricultural Colleges and Smith-Hughes Schools," pp. 130-132.
1935	49	Linke, J.A., "Coordinating the Work of the High Schools and the Colleges," pp. 158-160.
1948	62	"Committee on Cooperation with the American Vocational Association," p. 274.

Note: Beginning with the convention in 1910, the proceedings were published privately rather than by the U. S. Department of Agriculture.

Bulletins of the U. S. Department of Agriculture

Year	Bulletin No.	Author, Title, Pages
1913	7	Jackson, Edwin R., Agricultural Training Courses for Employed Teachers, 17 pp.
1915	132	Lane, C.H., and Miller, E.A., Correlating Agriculture with School Studies in the Southern States, 41 pp.
	213	Merritt, Eugene, The Use of Land in Teaching Agriculture in Secondary Schools, 12 pp.
	281	Lane, C.H., and Heald, F.E., Correlating Agriculture with the Public School Subjects in the Northern States, 42 pp.
	294	Lane, C.H., Lessons on Cotton for the Rural Common Schools, 16 pp.
1916	346	Barrows, H.P., Home Projects in Secondary Courses in Agriculture, 20 pp.
	355	Whitson, A.R., Extension Course in Soils, 92 pp.
	385	Heald, F.E., School Credit for Home Practice in Agriculture, 27 pp.
	392	Miller, E.A., Lessons on Tomatoes for Rural Schools, 18 pp.
	434	Barrows, H.P., and Davis, H.P., Judging the Dairy Cow as a Subject of Instruction in Secondary Schools, 20 pp.
	464	Heald, F.E., Lessons on Poultry for Rural Schools, 34 pp.
1917	487	Barrows, H.P., Judging Horses as a Subject of Instruction in Secondary Schools, 31 pp.
	521	Barrows, H.P., Courses in Secondary Agriculture for Southern Schools, First and Second Years, 53 pp.
	527	Sampson, H.O., Some Exercises in Farm Handicraft for Rural Elementary Schools, 38 pp.
	592	Barrows, H.P., Courses in Secondary Agriculture for Southern Schools, Third and Fourth Years, 40 pp.
	593	Barrows, H.P., Judging Sheep as a Subject of Instruction in Secondary Schools, 31 pp.
1919	763	Dille, Alvin, Lessons on Dairying for Rural Schools, 31 pp.
1920	863	Mattoon, Wilbur R., and Dille, Alvin, Forestry Lessons on Home Woodlands, 46 pp.

Circulars of the Office of the Secretary

Year	Circular No.	Author, Title, Pages
1907	24	The Man Who Works with His Hands (Address by President Roosevelt at the Semi-Centennial Celebration of the Founding of Agricultural Colleges in the United States, at Lansing, Michigan, May 31, 1907), 14 pp.
	25	The Unproductive Farm, 8 pp.
1910	33	Knapp, S.A., The Mission of Cooperative Demonstration Work in the South, 8 pp.
1915	47	Cooperative Agricultural-Extension Work, 12 pp.

Circulars of the U. S. Department of Agriculture

Year	Circular No.	Author, Title, Pages
1919	68	Dille, Alvin, How Teachers May Use Publications on the Control of Diseases and Insect Enemies of the Home Garden, 4 pp.
1921	155	Schopmeyer, C.H., How Teachers May Use Farmers' Bulletin 1087, Beautifying the Farmstead, 6 pp.
	156	Merrill, F.A., How Teachers May Use Farmers' Bulletin 1175, Better Seed Corn, 6 pp.
	157	Merrill, F.A., How Teachers May Use Farmers' Bulletin 1148, Cowpeas, Culture and Varieties, 8 pp.
	158	Merrill, F.A., How Teachers May Use Farmers' Bulletin 1128, Forage for Cotton Belt, 8 pp.
	159	Merrill, F.A., How Teachers May Use Farmers' Bulletin 1121, Factors That Make for Success in Farming in the South, 7 pp.

Farmers' Bulletins

Year	Bulletin No.	Author, Title, Pages
1899	98	Mudd, A.I., editor, Suggestions to Southern Farmers, 48 pp.
1900	109	Bailey, L.H., Farmers' Reading Courses, 20 pp.
1905	218	Corbett, L.C., The School Garden, 40 pp.
1909	218	Corbett, L.C., The School Garden, revised, 41 pp.
1910	385	Howe, F.W., Boys' and Girls' Agricultural Clubs, 23 pp.
	408	Crosby, Dick J., School Exercises in Plant Production, 48 pp.
	409	Crosby, D.J., and Howe, F.W., School Lessons on Corn, 29 pp.
1911	468	Jackson, Edwin R., Forestry in Nature Study, 43 pp.
1913	566	Ward, W.F., Boys' Pig Clubs, 16 pp.
1914	606	Lane, C.H., and Banks, N., Collection and Preservation of Insects and Other Material for Use in the Study of Agriculture, 18 pp.
	617	Lane, C.H., School Lessons on Corn, 15 pp.
1915	638	Scoates, Daniels, Laboratory Exercises in Farm Mechanics for Agricultural High Schools, 26 pp.

Annual Reports of the Director of the Extension Service

Year	Author, Title, Pages
1924	Shinn, Erwin H., "Agricultural Instruction in Schools," pp. 20-22.
1925	"Agricultural Instruction," pp. 21-23.
1926	"Agricultural Instruction in Schools," pp. 28-29.
1927	"Agricultural Instruction in Schools," pp. 29-30.
1928	"Agricultural Instruction," pp. 9-11.
1929	"Agricultural Instruction," pp. 9-10.

Documents of the States Relations Service

Year	Doc. No.	Author, Title, Pages
1915	15	List of Texts and References in Agriculture for Secondary Schools, 14 pp.
1917	38	Barrows, H.P., Farm Records and Accounts, Suggestions for Teaching Subject in Secondary Schools, 10 pp.
	42	Barrows, H.P., Agricultural Exhibits and Contests, Suggestions for Teaching Subjects in Secondary Schools, 8 pp.
	57	Barrows, H.P., Raising Ducks, Geese, and Turkeys, Suggestions for Teachers in Secondary Schools, 10 pp.
	58	Barrows, H.P., Types and Breeds of Farm Animals, Suggestions for Teachers in Secondary Schools, 12 pp.
	62	Barrows, H.P., Home Floriculture and Home-Ground Improvement, Suggestions for Teachers in Secondary Schools, 12 pp.
	63	Barrows, H.P., Propagation and Pruning of Plants, Suggestions for Teachers in Secondary Schools, 12 pp.
	72	Barrows, H.P., Marketing Farm Products, Suggestions for Teachers in Secondary Schools, 12 pp.
	73	Barrows, H.P., Increasing Production on Farms, Suggestions for Teachers in Secondary Schools, 12 pp.
1918	76	Barrows, H.P., Instruction in Sheep and Goat Husbandry, Suggestions for Teachers in Secondary Schools, 12 pp.
	81	Barrows, H.P., Beef Production, Suggestions for Teachers in Secondary Schools, 12 pp.

Unclassified Publications of the States Relations Service

Year	Author, Title, Pages
1916	Miller, E.A., How Teachers May Use Farmers' Bulletin 693, Bur Clover, 2 pp.
	Miller, E.A., How Teachers May Use Farmers' Bulletin 664, Strawberry Growing in the South, 2 pp.
	Heald, F.E., How Teachers May Use Farmers' Bulletin 662, Apple-Tree Tent Caterpillar, 1 p.
	Heald, F.E., How Teachers May Use Farmers' Bulletin 690, Field Pea as Forage Crop, 2 pp.
	Heald, F.E., How Teachers May Use Farmers' Bulletin 704, Grain Farming in Corn Belt, 2 pp.
	Heald, F.E., How Teachers May Use Farmers' Bulletin 702, Cottontail Rabbits in Relation to Trees and Farm Crops, 2 pp.
	Miller, E.A., How Teachers May Use Farmers' Bulletin 431, Peanut, 2 pp.
	Heald, F.E., How Teachers May Use Farmers' Bulletin 743, Feeding of Dairy Cows, 2 pp.
	Miller, E.A., How Teachers May Use Farmers' Bulletin 729, Corn Culture in Southeastern States, 2 pp.
	Heald, F.E., How Teachers May Use Farmers' Bulletin 687, Eradication of Ferus from Pasture Lands, 2 pp.
1917	Heald, F.E., How Teachers May Use Farmers' Bulletin 743, Feeding of Dairy Cows, revised, 2 pp.
1919	Shinn, E.H., How Teachers May Use Farmers' Bulletin 948, Rag-Doll Seed Tester, 2 pp.

Yearbooks

Year	Author, Title, Pages
1894	True, A.C., "Education and Research in Agriculture in the United States," pp. 81-116.
1897	True, A.C., "Popular Education of Farmers in the United States," pp. 279-290.
1899	True, A.C., "Agricultural Education in the United States," pp. 157-190.
1901	True, A.C., "Some Problems of the Rural Common School," pp. 133-155.
1902	Rommel, George M., "The Educational Value of Live-stock Exhibitions," pp. 259-264. True, A.C., "Progress in Secondary Education in Agriculture," pp. 481-500.
1903	Hamilton, John, "The Farmers' Institute," pp. 149-158.
1904	Crosby, D.J., "Boys' Agricultural Clubs," pp. 489-496.
1905	Crosby, D.J., "The Use of Illustrative Material in Teaching Agriculture in Rural Schools," pp. 257-274.
1906	True, A.C., "Introduction of Elementary Agriculture into Schools," pp. 151-164.
1907	Crosby, D.J., "Training Courses for Teachers of Agriculture," pp. 207-220.
1909	Knapp, S.A., "The Farmers' Cooperative Demonstration Work," pp. 153-160.
1910	Crosby, D.J., and Crocheron, B.H., "Community Work in the Rural High School," pp. 177-188.
1911	Knapp, Bradford, "Some Results of the Farmers' Co-operative Demonstration Work," pp. 285-296.
1912	Crosby, D.J., "Agriculture in Public High Schools," pp. 471-482.

1915 Ward, W.F., "The Boys' Pig Club Work," pp. 173-188.
Slocum, R.R., "The Poultry Club Work in the South," pp. 195-200.

1919 Dille, Alvin, "The Reorganization of the Country School," pp. 289-306.

1920 Smith, C.B., and Farrell, G.E., "Boys' and Girls' Clubs Enrich Country Life," pp. 485-494.

Agricultural Education Monthly

Year	Title, Volume, Pages, Month
1915	"American Association for the Advancement of Agricultural Teaching--Organization and Constitution," 1:1-2, January.
	"The Use of Land in Connection with Agricultural Teaching," 1:2-3, January.
	"Farm Practice in High School Courses in Agriculture," 1:4, January.
	"Use of the Home Farm in Agricultural Teaching," 1:1-8, February.
	"Sources of Information for Teachers of Agriculture," 1:8, February.
	"The San Jose Scale--A Lesson for Secondary Schools," 1:14-20, March.
	"Alfalfa Production," 1:23-27, April.
	"Hatching and Rearing Chicks as a Subject of Instruction in Secondary Schools," 1:29-33, May.
	"Teaching Pork Production in Secondary Schools," 1:35-39, September.
	"Professional Improvement for Teachers of Agriculture," 1:39-42, September.
	"Use of Illustrative Material in Secondary Schools," 1:43-48, October.
	"Weeds as a Subject of Instruction in Secondary Schools," 1:48-52, October.
	"Methods of Teaching Agriculture in Secondary Schools," 1:49-59, November.
	"The Use of Farmers' Bulletins in Teaching Farm Mechanics in Secondary Schools," 1:59-60, November.
	"A Simple Method of Cataloguing Agricultural Literature Suitable for the School or Home Library," 1:61-67, December.
	"The Home Vegetable Garden--Suggestions for Its Utilization in Secondary Agricultural Instruction," 1:67-72, December.
1916	"Squab Raising as a Subject of Instruction in Secondary Schools," 2:1-3, January.
	"Beekeeping as a Subject of Instruction in Secondary Schools," 2:4-8, January.
	"Peach Growing as a Subject of Instruction in Secondary Schools," 2:9-16, February.
	"Breaking and Training Colts," 2:17-19, March.
	"Control of Grasshoppers," 2:19-22, March.
	"An Analysis of the Farm Business," 2:22-24, March.
	"Potato Instruction," 2:25-31, April.

"Instruction in Strawberry Growing," 2:31-34, April.
"The Use of Concrete on the Farm," 2:35-37, May.
"Production of Clean Milk," 2:37-41, May.
"Bridge Grafting of Fruit Trees," 2:41-42, May.
"Teaching Corn Production in Secondary Schools," 2:43-50, September.
"Teaching Swine Judging in Secondary Schools," 2:51-58, October.
"Poultry Management--Suggestions for Teaching the Subject in Secondary Schools," 2:59-65, November.
"Blackberry and Dewberry Culture," 2:67-70, December.
"How Secondary Schools May Use Farmers' Bulletins on Marketing," 2:70-71, December.
"Control of House Flies," 2:71-72, December.

Note: This monthly publication was started in January, 1915, and then was discontinued after the December issue in 1916.

Miscellaneous Publications of the U. S. Department of Agriculture

Year	Misc. No.	Author, Title, Pages
1929	36	True, A.C., History of Agricultural Education in the United States, 1785-1925, 436 pp.
1930	84	Edwards, Everette E., A Bibliography of the History of Agriculture in the United States, pp. 149, 150, 209-214.

APPENDIX C

CHRONOLOGICAL LISTING OF SELECTED MATERIALS REVIEWED FROM THE U. S. OFFICE OF EDUCATION, ITS PREDECESSOR (U. S. BUREAU OF EDUCATION), AND THE FEDERAL BOARD FOR VOCATIONAL EDUCATION

Bulletins of the U. S. Bureau of Education
and U. S. Office of Education

Year	Bulletin No.	Author, Title, Pages
1907	2	Jewell, James R., Agricultural Education, Including Nature Study and School Gardens, 140 pp.
1908	1	Bailey, Liberty H., On the Training of Persons to Teach Agriculture in the Public Schools, 53 pp.
1912	6	Agricultural Education in Secondary Schools, 53 pp.
	10	Bibliography of Education in Agriculture and Home Economics, 62 pp.
	15	Noyes, Frederick K., abstractor, Current Educational Topics, No. II, 115 pp.
	18	Leiper, M.A., Teaching Language through Agriculture and Domestic Science, 30 pp.
	20	Brown, H.A., Readjustment of a Rural High School to the Needs of the Community, 31 pp.
	28	Judd, Zebulon, Cultivating the School Grounds in Wake County, North Carolina, 12 pp.
1913	6	Robinson, C.H., and Jenks, F.B., Agricultural Instruction in High Schools, 80 pp.
	14	Agricultural Instruction in Secondary Schools, 51 pp.
	22	Bibliography of Industrial, Vocational, and Trade Education, 92 pp.
	30	Ryan, W. Carson, abstractor, Education in the South, 87 pp.
	43	Brooks, Eugene C., Agriculture and Rural Life Day, 77 pp.
	49	Monahan, A.C., and Phillips, Adams, The Farragut School: A Tennessee Country Life High School, 23 pp.
1914	8	Stimson, R.W., The Massachusetts Home-Project Plan of Vocational Agricultural Education, 104 pp.
	27	Agricultural Teaching, 87 pp.
	36	Andrews, Benjamin R., Education for the Home, 53 pp.
	37	Andrews, Benjamin R., Education for the Home, 207 pp.

	38	Andrews, Benjamin R., Education for the Home, 109 pp.
	39	Andrews, Benjamin R., Education for the Home, 61 pp.
1915	33	Myers, George E., Problems of Vocational Education in Germany, with Special Application to Conditions in the United States, 42 pp.
1916	2	Foght, H.W., Rural and Agricultural Education at the Panama-Pacific International Exposition, 112 pp.
	21	National Education Association Committee on Vocational Education, Vocational Secondary Education, 163 pp.
	44	Lane, C.H., and Crosby, D.J., District Agricultural Schools of Georgia, 32 pp.
1917	6	Randall, J.L., Educative and Economic Possibilities of School-Directed Home Gardening in Richmond, Indiana, 25 pp.
	26	Smith, Charles C., Garden Clubs in the Schools of Englewood, New Jersey, 44 pp.
	34	Monahan, A.C., and Dye, C.H., Institutions in the United States Giving Instruction in Agriculture, 1915-16, 115 pp.
	38	Jarvis, Chester D., Vocational Teachers for Secondary Schools. What the Land-Grant Colleges Are Doing to Prepare Them, 85 pp.
1918	3	Lane, C.H., Agricultural Instruction in the High Schools of Six Eastern States, 73 pp.
	35	National Education Association Commission on the Reorganization of Secondary Education, Cardinal Principles of Secondary Education, 32 pp.
	44	Lane, C.H., Agricultural Education, 1916-18, 40 pp.
1919	25	Bowden, William T., Vocational Education, 30 pp.
	66	Training Teachers of Agriculture, 44 pp.
	85	Barrows, H.F., Development of Agricultural Instruction in Secondary Schools, 108 pp.
1920	35	National Education Association Commission on the Reorganization of Secondary Education, Agriculture in Secondary Schools, 32 pp.
1921	8	Osburn, W.J., Foreign Criticism of American Education, 158 pp.

	40	Jarvis, C.D., Agricultural Education, 26 pp.
1923	19	Works, George A., Agricultural Education, 21 pp.
	27	John, W.C., Hampton Normal and Agricultural Institute, 118 pp.
	28	Bawden, William T., Vocational Education, 26 pp.
1924	4	Nelson, C.A., and Windes, E.E., Type Rural High School, 36 pp.
1925	6	Windes, E.E., High-School Education of the Farm Population in Selected States, 24 pp.
	10	Ferriss, E.N., Rural High School, Its Organization and Curriculum, 74 pp.
	32	Works, G.A., Agricultural Education, 11 pp.
1927	26	Windes, Eustace E., Trends in the Development of Secondary Education, 41 pp.
1928	28	Ferriss, Emery N., and others, The Rural Junior High School, 79 pp.
1929	22	Jessen, Carl A., Secondary Education, 19 pp.
1930	13	Gaumnitz, Walter H., Smallness of America's Rural High Schools, 78 pp.
1931	5	Cooper, William J., and others, Symposium on Home and Family Life in a Changing Civilization, 34 pp.
	20	Hamlin, H.M., "Agricultural Education," Biennial Survey of Education, 1928-30, Vol. I, pp. 271-296.
1933	15	Blauch, Lloyd E., Federal Co-operation in Agricultural Extension Work, Vocational Education, and Vocational Rehabilitation, 297 pp.
1934	18	Proffitt, Maris M., High-School Clubs, 64 pp.
1935	15	Cook, Katherine M., editor, Reorganization of School Units, 91 pp.

Note: The Bureau of Education became the Office of Education in 1930.

Annual Reports of the Commissioner of Education

Year	Vol.	Author, Title, Pages
1871		"Agricultural Education Convention," pp. 424-426.
1880		"Recent History of Agricultural Colleges," pp. CXL-CXLVI.
1881		"Royal Agricultural High School of Berlin," pp. CLXXX-CLXXXII.
1882-83		"Education in Agriculture," pp. CLII-CLV.
1884-85		"Meaning of the Expression, Industrial Education," p. CCVI.
1885-86		"Manual and Technical Instruction," pp. XVI-XVIII.
1886-87		"Manual and Industrial Training," pp. 782-815. "Agricultural Education in France," pp. 983-984.
1887-88		"Manual Training," pp. 33, 166, 825-926.
1888-89	I	"Manual and Industrial Training," pp. 411-424.
1889-90	II	"Agriculture," pp. 996-1002. "Courses of Study," pp. 1111-1117. "Manual and Industrial Training," p. 1148.
1890-91	I	"Colleges of Agriculture and the Mechanic Arts," pp. 579-644.
1891-92	II	"Colleges of Agriculture and the Mechanic Arts," pp. 1188-1193.
1892-93	II	"Documents Illustrative of American Educational History," pp. 1225-1415. "The Curriculum for Secondary Schools," pp. 1457-1464. "The National Educational Association," pp. 1495-1549.
1893-94	I	"The Teaching of Agriculture," pp. 804-808.

1896-97	I	White, H.C., "What Should Be Taught in Our Colleges of Agriculture?" pp. 436-443.
1897-98	II	"Methods of Instruction in Agriculture," pp. 1575-1622.
1898-99	I	"School Gardens," pp. 1067-1085.
1901	I	"The Hampton Normal and Agricultural Institute," pp. 474-487.
	II	"Agricultural and Mechanical Colleges," pp. 1801-1843. "Manual and Industrial Training," pp. 2231-2269. "Hampton Normal and Agricultural Institute," pp. 2463-2467.
1902	I	Mowry, W.A., "The First American Public School," pp. 541-550.
1903	II	Hays, Willett M., "Agricultural Education in High Schools," pp. 1368-1372.
1905	I	"The American System of Agricultural Education," p. XXXIII. True, A.C., "The American System of Agricultural Education and Research," pp. 244-256.
1908	I	"Agricultural and Industrial Training, etc.," p. 125.
1909	I	"Michigan Commission on Industrial and Agricultural Education," p. 49. "Agricultural Education," pp. 137-150.
1910	I	"National Society for the Promotion of Industrial Education," pp. 67-68. "Agricultural Education," pp. 255-278.
1911	I	"Progress in Teaching Agriculture," p. 12. Monahan, A.C., "Agricultural Education," pp. 331-370.
1912	I	Boykin, James C., "Educational Legislation in 1912 for Agricultural and Industrial Training," pp. 75-80. Jenks, F.B., "A Review of Agricultural Education in 1911-12," pp. 263-280. Prosser, C.A., "Progress in Vocational Education," pp. 281-297.

1913	I	Ryan, W. Carson, Jr., "The Vocationalizing of Education," pp. 1-5. Monahan, A.C., "Rural Education," pp. 157-210. Jenks, F.B., and Lane, C.H., "Progress of Agricultural Education in 1912-13," pp. 211-233. Bawden, William T., "Progress in Vocational Education," pp. 249-276.
1914	I	Ryan, W. Carson, Jr., "Vocational Education," pp. 9-11. McBrien, J.L., "Rural Education," pp. 99-125. Bawden, William T., "Progress in Vocational Education," pp. 239-289. Monahan, A.C., "Agricultural Education," pp. 291-318.
1915	I	Deffenbaugh, W.S., "School Credit for Home Work," pp. 69-70. Foght, H.W., Monahan, A.C., and McBrien, J.L., "Rural Education," pp. 81-112. Bawden, William T., "Vocational Education," pp. 221-278. Monahan, A.C., and Lane, C.H., "Agricultural Education," pp. 295-316.
1916	I	Hood, William R., "Agriculture in the Public Schools," p. 29. Foght, H.W., "Rural Education," pp. 77-95. Bawden, William T., "Vocational Education," pp. 143-175. Monahan, A.C., and Lane, C.H., "Agricultural Education," pp. 237-258.
1918		"The Federal Board for Vocational Education," pp. 20-25. "Agricultural Education," p. 124.
1919		"Agricultural Education," pp. 93-97.
1920		"Agricultural Education," pp. 60-65.
1938		"Agricultural Education," in Annual Report of the Secretary of the Interior, pp. 331-332.
1939		"Agricultural Education," in Annual Report of the Secretary of the Interior, pp. 114-115. "New Developments," in Annual Report of the Secretary of the Interior, pp. 122-124.

1940 "Agricultural Education," pp. 40-44.

1941 "Agricultural Education," pp. 64-68.

1941-43 "Agricultural Education," pp. 54-57.

1944 "Agricultural Education," pp. 33-35.

1945 "Agricultural Education," in Annual Report of Federal Security Agency, pp. 13-17.

1946 "Agricultural Education," in Annual Report of Federal Security Agency, pp. 102-106.

1947 "Agricultural Education," in Annual Report of Federal Security Agency, pp. 191-194.

1948 "Agricultural Education," in Annual Report of Federal Security Agency, pp. 513-517.

1949 "Agricultural Education," in Annual Report of Federal Security Agency, pp. 36-37.

1953 "Reappraisal of Programs of Vocational Education," in Annual Report of Department of Health, Education, and Welfare, pp. 179-180.

Federal Board for Vocational Education and U. S. Office of Education, Vocational Division

Vocational Leaflets

Year	Leaflet No.	Author, Title, Pages
1931	1	Ross, William A., and others, Suggestions for Teaching the Job of Controlling Black Stem Rust of Small Grains in Vocational Agriculture Classes, 16 pp.
1932	2	Ross, William A., and Haskell, R.J., Suggestions for Teaching the Job of Controlling Bunt (Stinking Smut) of Wheat in Vocational Agriculture Classes, 12 pp.
	3	Ross, William A., and Haskell, R.J., Suggestions for Teaching the Job of Controlling the Loose Smuts of Wheat and Barley in Vocational Agriculture Classes, 14 pp.
1933	4	Ross, William A., and Wallace, J.K., Suggestions for Teaching the Job of Grading Feeder and Stocker Steers in Vocational Agriculture Classes, 22 pp.
1937	2	Ross, William A., and Haskell, R.J., Suggestions for Teaching Job of Controlling Bunt (Stinking Smut) of Wheat in Vocational Agriculture Classes, revised, 12 pp.
1938	3	Ross, W.A., and Haskell, R.J., Teaching the Control of Loose Smuts of Wheat and Barley in Vocational Agriculture Classes, revised, 11 pp.
1939	1	Ross, W.A., and Popham, W.L., Teaching the Control of Black Stem Rust of Small Grains in Vocational Agriculture Classes, revised, 12 pp.
	4	Ross, W.A., Teaching the Grading of Feeder and Stocker Steers in Vocational Agriculture Classes, revised, 20 pp.
	6	Instruction in Poultry in Secondary Schools, 18 pp.

1942 8 Negro Farm Families Can Feed Themselves, 53 pp.

1943 12 Wright, J.C., Vocational Training Problems When the War Ends, 40 pp.

Note: The functions of the Federal Board for Vocational Education were transferred to the Office of Education in 1933, and the Board was made an advisory board to act without compensation.

Federal Board for Vocational Education and U. S. Office of Education, Vocational Division

Vocational Monographs

Year	Monograph No.	Author, Title, Pages
1926	2	Policies of the Federal Board for Vocational Education, Approved December 17, 1925, 18 pp.
	3	Lane, C.H., The Place of Vocational Agriculture in the Present Agricultural Situation, 14 pp.
1928	4	Martin, Verey G., The Tenure of Agricultural Teachers in Mississippi, 10 pp.
	5	Carnes, Arvey, A Course in Farm Shop Work for Teachers of Vocational Agriculture, 10 pp.
1929	6	Burd, Forrest G., A Method of Determining Courses of Study in Vocational Agriculture Based on an Analysis of the Business of Selected Farmers in Kentucky, 22 pp.
	7	Coggin, James K., Factors to be Considered in Locating Departments of Vocational Agriculture in the High Schools of North Carolina, 13 pp.
1930	8	Swanson, Herbert B., Master Teachers of Vocational Agriculture, 16 pp.
	9	Pearson, James H., Supervised or Directed Practice in Evening Agricultural Schools, 22 pp.
1931	10	Pearson, James H., and Mann, L.B., Organization and Teaching Procedure to Be Followed in Evening Schools on the Marketing of Livestock, 16 pp.
	11	Pearson, James H., and Bell, E.J., Jr., Organization and Teaching Procedure to Be Followed in Evening Agricultural Schools on the Marketing of Grain, 14 pp.
	12	Pearson, James H., and Stitts, T.G., Organization and Teaching Procedure to Be Followed in Evening Agricultural Schools on the Marketing of Cream or Butter and Fluid Milk, 20 pp.

	13	Pearson, James H., Wells, J.E., Jr., and Scanlan, John H., Organization and Teaching Procedure to Be Followed in Evening Agricultural Schools on the Marketing of Cotton, 19 pp.
1932	14	Pearson, James H., and Hensley, Harry C., Organization and Teaching Procedure to Be Followed in Evening Agricultural Schools on the Marketing of Vegetables, 33 pp.
	15	Pearson, James H., and Coon, James M., Organization and Teaching Procedures to Be Followed in Evening Agricultural Schools on the Marketing of Wool and Mohair, 11 pp.
	16	Pearson, James H., and Collins, William, Organization and Teaching Procedure to Be Followed in Evening Agricultural Schools on the Marketing of Tobacco, 12 pp.
	17	Pearson, James H., and Scanlan, John H., Organization and Teaching Procedure to Be Followed in Evening Agricultural Schools on the Marketing of Poultry Products, 40 pp.
1933	18	Pearson, James H., Reorganizing the Individual Farm Business, 27 pp.
1938	19	Stewart, R. M., and others, Agricultural Education Programs, Suggestions for Further Development of Vocational Education in Agriculture under National Vocational Education Acts, 21 pp.
1939	20	Hatch, J.W., and Lathrop, F.W., Discovering Occupational Opportunities for Young Men in Farming, 9 pp.
1940	21	Educational Objectives in Vocational Agriculture (supersedes Voc. Ed. Bul. 153, May, 1931), 14 pp.
1941	22	Clements, Dudley M., and others, Farm-Family Living, 11 pp.

Note: The functions of the Federal Board for Vocational Education were transferred to the Office of Education in 1933, and the Board was made an advisory board to act without compensation.

Federal Board for Vocational Education and U. S. Office of Education, Vocational Division

Vocational Bulletins

Year	Bul. No.	Series	Author, Title, Pages
1917	1	Gen. 1	Statement of Policies, 70 pp.
1918	13	Ag. 1	Hawkins, Layton, S., Agricultural Education: Organization and Administration, 43 pp.
	14	Ag. 2	Lane, Charles H., Reference Material for Vocational Agricultural Instruction, 26 pp.
	21	Ag. 3	Heald, Franklin E., The Home Project as a Phase of Vocational Agricultural Education, 43 pp.
	26	Ag. 4	Hawkins, Layton S., and others, Agricultural Education: Some Problems in State Supervision, 32 pp.
1919	27	Ag. 5	Hummel, William G., The Training of Teachers of Vocational Agriculture, 47 pp.
1920	53	Ag. 6	Shinn, Erwin H., Lessons in Plant Production for Southern Schools, 183 pp.
	56	Ag. 7	Shinn, Erwin H., Lessons in Animal Production for Southern Schools, 136 pp.
1921	63	Ag. 8	Schopmeyer, Clifford H., A Unit Course in Poultry Husbandry, 36 pp.
	68	Ag. 9	Schopmeyer, Clifford H., A Unit Course in Swine Husbandry, 46 pp.
1922	1	Gen. 1	Statement of Policies, revised, 98 pp.
	74	Ag. 10	Schopmeyer, Clifford H., Analyzing a Potato Enterprise, 39 pp.
	75	Ag. 11	Schopmeyer, Clifford H., Analyzing a Poultry Enterprise, 39 pp.
1923	81	Ag. 12	Stewart, Wilbur F., Rooms and Equipment for the Teaching of Vocational Agriculture in Secondary Schools, 30 pp.
	82	Ag. 13	Myers, Charles E., Effectiveness of Vocational Education in Agriculture, 63 pp.

	83	Ag. 14	Maltby, Robert D., Supervised Practice in Agriculture, 55 pp.
	84	Ag. 15	Lathrop, Frank W., Principles Underlying the Distribution of Aid to Vocational Education in Agriculture, 83 pp.
	88	Ag. 16	Schopmeyer, Clifford H., Analysis of the Management of a Farm Business, 28 pp.
	89	Ag. 17	Linke, John A., Agricultural Evening Schools, 41 pp.
	90	Ag. 18	Eaton, Theodore H., Agricultural Teacher Training, 45 pp.
1924	91	Ag. 19	Merrill, F.A., Job Lesson Units for Selected Truck and Fruit Crops Adapted to Southern Conditions, 61 pp.
	94	Ag. 20	Skidmore, Henry M., Teacher Training in Agriculture, 82 pp.
1925	13	Ag. 1	Lane, Charles H., Agricultural Education: Organization and Administration, revised, 58 pp.
	97	Ag. 21	Chapman, Paul W., Promoting Vocational Education in Agriculture, 67 pp.
	98	Ag. 22	Eaton, Theodore H., Principles in Making the Vocational Course of Study in Agriculture in the High School, 21 pp.
	100	Ag. 23	Barringer, Benton E., Student Teaching in Agriculture, 124 pp.
	101	Ag. 24	Schopmeyer, Clifford H., and Williams, Arthur P., Analysis of the Management of a Corn Growing Enterprise, 18 pp.
	103	Ag. 25	Williams, Arthur P., Methods of Teaching as Applied to Vocational Education in Agriculture, 49 pp.
1926	105	Ag. 26	Schopmeyer, Clifford H., and Williams, Arthur P., Analysis of the Management of a Cotton-Growing Enterprise, 24 pp.
	108	Ag. 27	Linke, John A., Agricultural Part-Time Schools, 29 pp.
	111	Ag. 28	Sargent, Harvey O., Vocational Education in Agriculture for Negroes, 92 pp.
	112	Ag. 29	Maltby, Robert D., Supervised Practice in Agriculture Including Home Projects, 56 pp.
1927	1	Gen. 1	Statement of Policies, revised, 107 pp.

	115	Ag. 30	National Committee on Advanced Courses in Vocational Education, Training for Leadership in Agricultural Education, 30 pp.
	117	Ag. 31	Williams, Arthur P., Agricultural Project Planning, 23 pp.
	118	Ag. 32	Schopmeyer, Clifford H., Analysis of the Operative Jobs of a Corn-Growing Enterprise, 17 pp.
	122	Ag. 33	Holton, Edwin L., A Study of the Professional Training of Teachers of Vocational Agriculture, 68 pp.
1928	82	Ag. 13	Myers, Charles E., Effectiveness of Vocational Education in Agriculture, revised, 60 pp.
	129	Ag. 34	Crandall, Will G., The Training of Teachers for Agriculture Evening Class Work, 69 pp.
	134	Ag. 35	Lane, Charles H., and Williams, Arthur P., Vocational Education in Agriculture, 1917-1927, 40 pp.
1929	98	Ag. 22	Eaton, Theodore H., Principles in Making the Vocational Course of Study in Agriculture in the High School, revised, 19 pp.
	135	Ag. 36	Ivins, Lester S., Training Teachers of Vocational Agriculture in Service, 89 pp.
1930	13	Ag. 1	Lane, Charles H., Agricultural Education: Organization and Administration, revised, 62 pp.
	88	Ag. 16	Schopmeyer, Clifford H., Analysis of the Management of a Farm Business, revised, 27 pp.
	89	Ag. 17	Pearson, James H., Agricultural Evening Schools, revised, 15 pp.
	101	Ag. 24	Schopmeyer, Clifford H., and Williams, Arthur P., Analysis of the Management of a Corn-Growing Enterprise, revised, 20 pp.
	103	Ag. 25	Williams, Arthur P., Methods of Teaching as Applied to Vocational Education in Agriculture, revised, 74 pp.
	105	Ag. 26	Schopmeyer, Clifford H., and Williams, Arthur P., Analysis of the Management of a Cotton-Growing Enterprise, revised, 24 pp.

	112	Ag. 29	Maltby, Robert D., Supervised Practice in Agriculture Including Home Projects, revised, 55 pp.
	144	Ag. 37	Fife, Ray, The Organization and Financing of Vocational Education in Agriculture for Ohio, 56 pp.
	147	Ag. 38	Williams, Arthur P., The Conference Procedure in Teaching Vocational Agriculture, 28 pp.
1931	153	Ag. 39	Training Objectives in Vocational Education in Agriculture, 31 pp.
	154	Ag. 40	Williams, Arthur P., and Ross, William A., Analyses of Special Jobs in Quality Milk Production, 17 pp.
1932	147	Ag. 38	Williams, Arthur P., The Conference Procedure in Teaching Vocational Agriculture, revised, 38 pp.
	163	Ag. 41	Williams, Arthur P., Supervised Farm Practice Planning, 88 pp.
	165	Ag. 42	Spanton, William T., Training Teachers in Supervised Farm Practice Methods, 125 pp.
1933	82	Ag. 13	Lathrop, Frank W., Effectiveness of Vocational Education in Agriculture, revised, 19 pp.
	108	Ag. 27	Pearson, James H., Agricultural Part-Time Schools, revised, 21 pp.
	167	Ag. 43	Newman, Walter S., The Earning Ability of Farmers Who Have Received Vocational Training, 44 pp.
	169	Ag. 44	Ross, William A., and Mattoon, W.R., Analysis of Special Jobs in Farm Forestry, 45 pp.
1934	89	Ag. 17	Pearson, James H., Agricultural Evening Schools, revised, 14 pp.
	98	Ag. 22	Eaton, Theodore H., Principles in Making the Vocational Course of Study in Agriculture in the High School, revised, 17 pp.
	101	Ag. 25	Williams, Arthur P., Analysis of the Management of a Corn-Growing Enterprise, revised, 18 pp.
	105	Ag. 26	Williams, Arthur P., Analysis of the Management of a Cotton-Growing Enterprise, revised, 20 pp.

	118	Ag. 32	Williams, Arthur P., Analysis of the Operative Jobs of a Corn-Growing Enterprise, revised, 12 pp.
	174	Gen. 5	Vocational Education and Changing Conditions, Changing Economic and Social Conditions and Their Effect upon Vocational Education, 112 pp.
	177	Ag. 45	Vocational Agriculture in Relation to Economic and Social Adjustments, 67 pp.
	178	Ag. 46	Getman, Arthur K., and others, Teaching Farm Credit, 43 pp.
1935	180	Ag. 47	Summaries of Studies in Agricultural Education, 196 pp.
1936	183	Ag. 48	Roberts, Roy W., and Lathrop, Frank W., Business Problems in Farming, 71 pp.
	188	Ag. 49	Hoskins, Edwin R., Young Men in Farming, 117 pp.
	191	Ag. 50	Ross, William A., Interpretive Science and Related Information in Vocational Agriculture, 27 pp.
1937	1	Gen. 1	Statement of Policies, revised, 137 pp.
	154	Ag. 40	Ross, W.A., Kelly, Ernest, and Babcock, C.J., Analyses of Special Jobs in Quality Milk Production, Procedures and Practices for Quality Milk Production on Farms, 15 pp.
1938	189	Ag. 51	Ross, W.A., and Scranton, L.L., Landscaping the Farmstead, Making Farm Home Grounds More Attractive, 88 pp.
1939	196	Ag. 52	Ross, W.A., and Mattoon, W.R., Farm Forestry, Timber Farming, Including Woods Management and Forest Tree Planting, 63 pp.
	13	Ag. 1	Linke, J.A., Agricultural Education, revised, 50 pp.
	201	Ag. 53	Dale, Tom, and Ross, W.A., Conserving Farm Lands, Planning for Soil-Erosion Control, Water Conservation, and Efficient Land-Use, 104 pp.
1940	209	Ag. 54	Ross, W.A., and others, Building Electrical Equipment for Farm, 97 pp.

1941	219	Gen. 6	Swanson, Herbert B., State and Preservice Preparation of Teachers of Vocational Education, 138 pp.
1942	217	Ag. 55	Stimson, Rufus W., and Lathrop, Frank W., History of Agricultural Education of Less Than College Grade in the United States, 648 pp.
1944	225	Ag. 56	Ross, W.A., Clements, D.M., and Johnson, E.J., Directing Vocational Agriculture Day-School Students in Developing Their Farming Programs, 72 pp.
1945	234	Gen. 7	Swanson, Herbert B., Vocational Education in Years Ahead, Report of Committee to Study Postwar Problems in Vocational Education, 138 pp.
1948	1	Gen. 1	Statement of Policies, revised, 112 pp.
	237	Ag. 57	Summaries of Studies in Agricultural Education, supplement no. 2 to Bul. 180, 120 pp.
1949	240	Ag. 58	Lathrop, Frank W., compiler, Evaluation of Local Programs of Vocational Education in Agriculture, Based on Criteria Prepared by National Standards Committee for Vocational Education in Agriculture, 75 pp.
1950	242	Ag. 59	Summaries of Studies in Agricultural Education, supplement no. 3 to Bul. 180, 61 pp.
1951	243	Ag. 60	Johnson, E.J., and others, The Advisory Council for a Department of Vocational Agriculture, 28 pp.
	246	Ag. 61	Summaries of Studies in Agricultural Education, supplement no. 4 to Bul. 180, 48 pp.
1952	248	Ag. 62	Summaries of Studies in Agricultural Education, supplement no. 5 to Bul. 180, 62 pp.
1953	251	Ag. 63	Summaries of Studies in Agricultural Education, supplement no. 6 to Bul. 180, 100 pp.

1954 253 Ag. 64 Summaries of Studies in Agricultural Education, supplement no. 7 to Bul. 180, 75 pp.

254 Ag. 65 Johnson, E.J., and Elam, W.N., Guiding High-School Students of Vocational Agriculture in Developing Farming Programs, 82 pp.

APPENDIX D

CHRONOLOGICAL LISTING OF SELECTED MATERIALS REVIEWED FROM THE NATIONAL EDUCATION ASSOCIATION

Proceedings of the Annual Convention of
the National Education Association

Year	Author, Title, Pages
1876	Pendleton, E.M., "What Are the Legitimate Duties of an Agricultural Professor?" pp. 266-272.
1893	DeKavalevsky, Ergraff, "Should Rural Schools Introduce Agriculture, Chemistry, Agricultural Botany, or Arboriculture?" pp. 304-307.
1902	Carter, Joseph, "The Practical Value of Teaching Agriculture in the Public Schools," pp. 431-441. Compton, L.M., "The Teaching of Agriculture with Reference to Future Employment," p. 862. "Instruction in the Elements of Agriculture in Rural Communities," pp. 222-224. Narden, E.C., "Correlation of the Schoolroom and Farm Work," p. 870. Wilson, James, "The Education of the American Farmer," pp.93-100.
1903	Bailey, L.H., "The Nature-Study Movement," pp. 109-116.
1906	Kern, O.J., "What Form of Industrial Training Is Most Practical and Best Suited to the Country Child?" pp. 198-202.
1907	Balcomb, E.E., "Agriculture in Normal Schools: Courses of Instruction and Financial Support," pp. 752-760. "Conference of National Committee on Agricultural Education," pp. 1063-1084. Kern, O.J., "The Consolidated School and the New Agriculture," pp. 277-282. Proctor, Bertha D., "Teaching Agriculture in the Classroom," pp. 1007-1010. "Report of the Committee on Industrial Education in Schools for Rural Communities," pp. 409-454.
1908	"Department of Rural Industrial Education," pp. 1187-1215. Hays, W.M., "Agriculture, Industries, and Home Economics in Our Public Schools," pp. 177-194. Morse, Charles H., "An Intermediate Industrial School Beginning at the Sixth School Year," pp. 173-176. "Preparation of Teachers for Agricultural Education," pp. 294-312.

"Report of the Committee on Industrial Education in Schools for Rural Communities," pp. 385-448.

1909 Butterfield, K.L., "The Dignity of Vocation as a Fundamental Idea in Industrial Education," pp. 273-277.
"The Davis Bill in Its Relation to Normal Schools," pp. 570-573.
"Department of Rural and Agricultural Education," pp. 953-992.

1910 "Department of Rural and Agricultural Education," pp. 1081-1114.
Graham, A.B., and others, "Report of Committee on Encouraging College Entrance Credit in High-School Agriculture," pp. 480-483.
"Report of the National Committee on Agricultural Education," pp. 590-593.
Russell, H.L., "Value of Demonstrative Methods in the Agricultural Education of the Rural Population," pp. 107-111.
Webster, W.F., "Vocational Education in Secondary Schools," pp. 260-265.
Zeller, John W., "Education in the Country for the Country," pp. 245-253.

1911 "Department of Rural and Agricultural Education," pp. 1117-1161.
Gibson, Carleton B., "The Progress and the True Meaning of the Practical in Education, in Vocational Training," pp. 260-264.
"Report of the National Committee on Agricultural Education," pp. 706-707.

1912 Balcomb, E.E., "The Place of the Normal School in Agricultural Education," pp. 823-832.
Barnes, Earl, "The Educational Value of Agriculture," pp. 471-474.
Bishop, E.C., "The Next Step in Teaching Agriculture in Rural Schools," pp. 474-480.
Call, Arthur D., "The Specialized or Vocational vs. the Composite High School," pp. 174-180.
"Department of Rural and Agricultural Education," pp. 1365-1413.
Wilson, Warren H., "A Social and Educational Survey of the Rural Community," pp. 281-286.

1913 "Department of Rural and Agricultural Education," pp. 801-818.
"Report of the Committee on Vocational Education and Vocational Guidance," pp. 573-580.

Storm, A.V., "The Relation of the Agricultural College to the State Normal School," pp. 516-521.

1914 "Department of Rural and Agricultural Education," pp. 877-907.
Pearse, Carroll G., "Vocational Education--Its Terminology," pp. 582-586.
Snedden, David, "Fundamental Distinctions between Liberal and Vocational Education," pp. 150-161.

1915 Black, George H., and Wooster, Earl S., "Correlation of Chemistry and Agriculture," pp. 1005-1009.
"Department of Rural and Agricultural Education," pp. 1131-1159.
Johnson, David B., "Agricultural Education in Normal Schools," pp. 227-229.
Randall, J.A., "Project Teaching," pp. 1009-1012.
Waters, Henry J., "Agricultural Education," pp. 193-199.

1916 "Department of Rural and Agricultural Education," pp. 613-636.

1917 "Department of Rural and Agricultural Education," pp. 599-613.

1918 "Department of Rural and Agricultural Education," pp. 271-293.
Greathouse, Charles A., "Agricultural Education under the Smith-Hughes Act," p. 269.

1919 "Department of Rural and Agricultural Education," pp. 281-288.
Waters, Henry J., "Agricultural Interests," pp. 51-55.

1920 "Department of Rural Education," pp. 271-304.

1921 Bagley, William C., "The Aims of Rural Education," pp. 694-699.
Burnham, Ernest, "The Rural School--The Great Problem in American Education," pp. 699-701.
"Department of Rural Education," pp. 523-616.
Owen, William B., "Report of the Commission on the Reorganization of Secondary Education," pp. 163-167.

1922 "Department of Rural Education," pp. 1099-1222.
Sims, John F., "Report of Committee on Rural Education," pp. 289-293.

Works, George A., "Outstanding Needs of Rural Life Today," pp. 225-229.

1923 "Department of Vocational Education and Practical Arts," pp. 1025-1049.
Kern, O.J., "The Contribution of the Classroom Teacher toward Progress in Education from the Viewpoint of Agriculture," pp. 584-588.

1925 Myers, Charles E., "The Relation of Measurement to Vocational Education in Agriculture," pp. 898-901.

1926 Davis, Kary C., "Can Rural School Forces Aid in Solving Agricultural Problems," abstract, pp. 541-544.

1928 Dunn, Fannie W., "The Place of the 4-H Clubs in the American System of Public Education," pp. 508-517.
Field, A.M., "The Mental Ability of the Student as a Factor in Instruction in Agriculture," abstract, pp. 975-976.
True, Alfred C., "The Place of 4-H Clubs in the American System of Public Education," abstract, pp. 504-508.

1929 Clements, D.M., "The Place of the Future Farmers of America in Training Farmers of Tomorrow," abstract, p. 952.
Lancelot, W.H., "Influence of Agricultural Education upon Standards and Methods of General Education," abstract, pp. 955-956.
Stewart, W.F., "A View of the Program of Vocational Education in Agriculture," abstract, pp. 965-966.
Wheeler, John T., "New Aspects of Farmer Training," abstract, pp. 949-950.

1930 Smith, Z.M., "Some Objectives in Vocational Education in Agriculture," abstract, pp. 949-951.
Stewart, W.F., "Vocational Interests of Farm Boys," abstract, p. 941.

1931 Lane, C.H., "The Social Significance of the Vocational Agricultural Department in a Rural High School," pp. 218-222.

1932 Smith, Z.M., "Measuring Effectiveness of Instruction in Vocational Agriculture," pp. 810-812.

1936 Astleford, Paul, "The Importance of Vocational Agriculture as a Service to Rural Youth," p. 626.

Fife, Ray, "Current Problems in Vocational Education in Agriculture," pp. 624-625.

1937 Fife, Ray, "Opportunities for Extending Vocational Education in Rural Communities," pp. 339-341.

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1873-1881 The Addresses and Journal of Proceedings of the Annual Convention of the National Educational Association.

1882-1906 The Journal of Proceedings and Addresses of the Annual Convention of the National Educational Association.

1907-1915 The Journal of Proceedings and Addresses of the Annual Convention of the National Education Association.

1916-1925 Addresses and Proceedings of the Annual Convention of the National Education Association.

1926-1954 Proceedings of the Annual Convention of National Education Association.

Year	Author, Title, Volume, Pages, Month, Year
1921	Blackwell, J.D., "Stimulating Interest in Vocational Agriculture through Junior Project Work," 1:76-79, October, 1921.
1922	Hamlin, H.M., "Using Community Resources in the Teaching of High School Agriculture," 1:320-321, March, 1922.
	Hypes, J.L., "Curriculum Building for Vocational Agricultural Education in Secondary Schools," 2:88-101, October-November, 1922.
	Hypes, J.L., "Some Considerations to Be Observed in Placing Vocational Agriculture in High School Programs of Study," 1:464-471, June, 1922.
	Myers, Charles E., "A Limiting Factor in the Farmer's Education," 1:415-417, May, 1922.
	Snedden, David, "Schools for Farmers' Sons--Present Deficiencies--Future Prospects," 1:241-246, February, 1922.
1923	Hypes, J.L., "The Relationship between the Vocational Agricultural Department of a High School and the High School as a Whole," 3:49-58, October, 1923.
1924	Barringer, Benton E., "The Teaching Job in Vocational Agriculture," 3:406-413, May-June, 1924.
	Hamlin, H.M., "Types of Public School Agriculture," 3:231-234, January, 1924.
	Snedden, David, "Rural Liberal High Schools, and Vocational Schools of Agriculture: Their Co-ordination," 3:337-342, April, 1924.
1925	Browne, T.E., "Vocational Agriculture Revolutionizes a Farming Community," 4:371-373, April, 1925.

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1928	"Education for Creative Farming," 17:46, February, 1928.
1934	Wieting, C.M., and McCoy, M.L., "Using the Rural Community Teaching," 23:78, March, 1934.
1949	Dougherty, Rowland, "'Vo-Ag' Teacher," 38:439-442, September, 1949.
1953	Hatch, James W., "From Green Hand to Star Farmer," 42:98, February, 1953.
1954	Stewart, Vannoy, "From Cotton to Cows," 43:212-213, April, 1954.

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1897	Report of the Committee of Twelve on Rural Schools, 228 pp.
1905	Report of the Committee on Industrial Education in Schools for Rural Communities, 97 pp.
1914	Report of the Committee on Vocational Education and Vocational Guidance, 64 pp. Vocational Education, Proposed Terminology, 45 pp.
1934	Cyr, Frank W., editor, Economical Enrichment of the Small Secondary-School Curriculum, Yearbook of the Department of Rural Education, 94 pp.
1942	Agriculture (Resource Unit for Secondary Teachers), 52 pp.
1947	Farm Leaders and Teachers Plan Together, 35 pp.
1948	Safety in Farm Mechanics and with Farm Machines, Rural Series Bulletin No. 2, 31 pp.
1952	Educational Policies Commission, Education for All American Youth--A Further Look, revised, 402 pp.
1954	Isenberg, Robert M., editor, The Community School and the Intermediate Unit, Yearbook of the Department of Rural Education, 259 pp.

APPENDIX E

CHRONOLOGICAL LISTING OF SELECTED MATERIAL REVIEWED FROM BULLETINS OF THE NATIONAL SOCIETY FOR PROMOTION OF INDUSTRIAL EDUCATION, VOCATIONAL EDUCATION MAGAZINE, AMERICAN VOCATIONAL ASSOCIATION JOURNAL AND NEWS BULLETIN, AND MISCELLANEOUS PUBLICATIONS OF THE AMERICAN VOCATIONAL ASSOCIATION

Bulletins of the National Society for Promotion of Industrial Education

Year	No.	Author, Title, Pages
1916	22	Proceedings of the Ninth Annual Meeting, 1916, pp. 289-324.
1917	25	What Is the Smith-Hughes Bill, 48 pp.
1918	26	Problems of Administering the Federal Act for Vocational Education, 83 pp.
1919	31	Agricultural Education, 29 pp.
1920	32	"Agricultural Education," Proceedings of the Joint Convention of the National Society for Vocational Education and the Vocational Education Association of the Middle West, pp. 27-73. Works, George A., "Future Problems in the Administration of Vocational Agriculture," Proceedings of the Joint Convention of the National Society for Vocational Education and the Vocational Education Association of the Middle West, pp. 230-234.

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Year	Author, Title, Volume, Pages, Month, Year
1922	Blackwell, J.D., "Some Developments in Agricultural Education in Pennsylvania," 1:264-266, December, 1922.
	Bruce, William F., "A Short-Course in Farm Shop Work," 1:182-185, November, 1922.
	Colvin, Carl, "Measuring Results in Home Project Work," 1:261-264, December, 1922.
	Colvin, Carl, "Some Reflections on the Soundness of the Project Method," 1:18-21, September, 1922.
	Eaton, T.H., "A Suggestive Empirical Analysis of the Work of the Teachers of Vocational Agriculture in the Public High School," 1:258-261, December, 1922.
	Fife, Ray, "Experiences of Ohio in the Conduct of Part-Time Work in Agriculture," 1:178-182, November, 1922.
	Gentry, C.B., "The Home Project in Agriculture," 1:268, December, 1922.
	Hill, J.E., "The Winter Short-Course for High Schools," 1:185-189, November, 1922.
	Lathrop, F.W., "Suggestions for a Method of Occupational Analysis for Farm Employments as a Basis of Courses of Study," 1:16-18, September, 1922.
	Matthew, E.B., "Part-Time or Short-Course Work in Vocational Agriculture in Arkansas," 1:267, December, 1922.
	"Report of Joint Committees on Relationships between Extension and Vocational Education Forces in the Various States," 1:87-92, October, 1922.
	Stimson, R.W., "The Relationship of Occupational Analysis to the Project Method," 1:12-15, September, 1922.
	Stimson, Rufus W., "Vocational Agricultural Education--Gains and Tendencies," 1:92-96, October, 1922.
	Works, George A., "Editorial," 1:86-87, October, 1922.
	Works, George A., "The Place and Importance of Short Courses in Agricultural Education," 1:9-12, September, 1922.
	Works, George A., "Relationships in the Development of Short Course Instruction," 1:177-178, November, 1922.
1923	Adams, J.B., "Community Service through the Agriculture Teacher," 1:501, March, 1923.

Allen, Harold B., "Planning the Farm Course with the Farmer," 1:734-735, June, 1923.
Anderson, C.S., "The Agricultural Club of the Rockford High School," 1:341-342, January, 1923.
Banks, L.J., "Community Service," 2:16-17, September, 1923.
Barbee, W.D., "Cooperation Stimulated by Work of Teacher of Agriculture," 1:502, March, 1923.
Beilby, Smith G., "Evening Class Instruction at Bath," 1:737, June, 1923.
Bender, Wilbur H., "Summary of the Winter Short-Term Agricultural Work in Iowa," 1:344-346, January, 1923.
Charters, W.W., "The Limitations of the Project Method," 1:568-570, April, 1923.
Colvin, Carl, "Editorial," 1:568, April, 1923.
Davidson, A.P., "The Home Project in Vocational Agriculture," 2:18-19, September, 1923.
Davies, L.R., "A Colorado Class Project," 1:738-739, June, 1923.
"Do Boys Who Have Taken Vocational Agriculture Turn to Farming," 1:vii, January, 1923.
"Does High School Agriculture Function?" 1:421-422, February, 1923.
Elliott, E.E., "Data Regarding High-School Students of Agriculture in Oregon," 2:103-106, October, 1923.
Faust, S.L., "The Home Project," 1:658-660, May, 1923.
Field, A.M., "Evening-School Work in Vocational Agriculture," 2:97-103, October, 1923.
Friend, W.H., "Part-Time Course in Citrus Culture," 2:189-190, November, 1923.
Gentry, C.E., "Deriving Courses of Study in Vocational Agriculture from Occupational Analyses of Farming Employments," 2:271-278, December, 1923.
Gentry, C.B., "To State Supervisors and Members of Teacher Training Departments," 2:14-16, September, 1923.
Getman, A.K., "Interpreting Local Practices in Building Agricultural Curriculums," 1:653-657, May, 1923.
Graybeal, H.C., "Farm Shop Work," 1:740, June, 1923.
Hall, William F., "Mechanical Drawing for the Farm Shop--How Much, How?" 2:183-188, November, 1923.
Hamlin, H.M., "Some Illustrations of Effective Use of Farms and Farmers in Teaching Agriculture," 1:339-341, January, 1923.
Heald, Franklin E., "A Fourteen-Year Record," 2:278, December, 1923.

Hinds, James H., "Does Mentality Influence the Choice of High School Subjects," 2:178-183, November, 1923.
Jansen, Raymond B., "Rural School Day at Lowville, New York," 2:107, October, 1923.
Kennedy, A.C., "Project Procedure for Ten Acres of Wheat," 2:280, December, 1923.
Kirkwood, W.P., "Call for Farm Boys of Mechanical Turn," 1:662, May, 1923.
Krill, George H., "Supervised Practice in Farm Machinery Short Courses," 1:579, April, 1923.
Lane, C.H., "Present Tendencies in the Development of Vocational Agriculture," 2:9-14, September, 1923.
Lathrop, F.W., "A Recitation in Farm Management," 1:732-734, June, 1923.
Lathrop, F.W., "Teaching General Information," 2:191-192, November, 1923.
Lillard, J.B., "Developing the Group Spirit," 2:17-18, September, 1923.
McGinnis, C.A., "The Class Project in Operation," 1:570-572, April, 1923.
Maltby, R.D., "State Program for Supervised Practice Work," 1:572-575, April, 1923.
Perritte, S.V., "Community Work in Connection with Vocational Agriculture," 2:190-191, November, 1923.
Peterson, Verd, "Circuit or Group System of Teaching Agriculture in South Carolina," 1:499-500, March, 1923.
Pope, James D., "Relationships between Vocational Agricultural Teaching and Junior Project Work," 2:188-189, November, 1923.
Richardson, Ralph, "A Class Project in Poultry," 1:578-579, April, 1923.
Roehl, L. M., "Farm Equipment Inventories and Some Subsequent Farm Mechanics Work," 1:735-736, June, 1923.
Roehl, L.M., "A Lesson or Shop Job in Overhauling Machinery," 1:419-421, February, 1923.
Rouzer, P.C., "Teaching Cooperation through Agricultural Organizations," 1:416-419, February, 1923.
Salmon, S.O., "The Young Farmers' Club," 2:106-107, October, 1923.
"A Sample Plan Initiating the Project," 1:504, March, 1923.
Sampson, H.O., "Short-Courses: Their Place and Function in a Program in Agricultural Education," 1:337-339, January, 1923.
Sampson, H.O., "Utilizing a State Agricultural Convention to Promote Vocational Agriculture," 1:657-658, May, 1923.

Spratt, Winfield, "Determining High Students in Judging Work," 1:503, March, 1923.
Starrak, J.A., "The Status of Farm Engineering in Our Vocational Agriculture Schools," 1:660-662, May, 1923.
Stimson, Rufus W., "An Inductive Lesson," 1:736-737, June, 1923.
Struck, F.T., "A Combination Classroom Laboratory and a Farm Shop," 2:269-271, December, 1923.
Thomas, Roy H., "Supervised Practice for Part-Time Students," 1:576-578, April, 1923.
Wheeler, J.T., "The Best Use of the Ninety-Minute Period in Agricultural Instruction," 1:496-499, March, 1923.
"What Becomes of the Boys Who Have Had Vocational Courses in Agriculture," 1:346-347, January, 1923.
Williams, C.V., "Relation of the Teacher of Vocational Agriculture to His Community," 1:412-416, February, 1923.
Works, George A., "Questionable Comparisons," 1:495-496, March, 1923.

1924 Allen, H.B., "Job Analysis in the Planning of Home Projects," 2:1099-1102, December, 1924.
Anderson, C.S., "An Acid Soil Survey," 2:1105-1106, December, 1924.
Armstrong, L.E., "The Supervised Study Period," 2:722-723, May, 1924.
Ball, I.B., "Farm Mechanics in Utah High Schools," 2:723-724, May, 1924.
Bayne, Thomas L., Jr., "The Effectiveness of Vocational Education in Agriculture," 2:818-821, June, 1924.
Bruner, R.E., "A Class Project in Poultry Husbandry," 2:906-908, September, 1924.
Cale, F.B., "Results of Supervised Practice at Sparta High School," 2:541, March, 1924.
Chandler, F.C., "A Project in Improvement of Community Cotton Production," 2:372-374, January, 1924.
Dadisman, S.H., "The Project Method of Teaching," 2:718, May, 1924.
Dickinson, Sherman, "Professionalized Subject-Matter Courses," 2:450-452, February, 1924.
Getman, A.K., "Dairy School and Contest at the National Dairy Show," 2:370-372, January, 1924.
Green, W.J., "Junior Projects in Outlying Rural Schools," 2:905-906, September, 1924.
Hamlin, H.M., "Suggestions on Curriculum Making for the Middle West," 2:816-818, June, 1924.
Henderson, C.O., "How I Supervise My Projects," 2:630-631, April, 1924.

Howard, C.G., "A Study Outline for Home Projects," 2:1102, December, 1924.
Hubbard, F.J., "The Minimum Financial Goal in Vocational Agriculture in Mississippi," 2:903-905, September, 1924.
Jordan, M.L., "Class Enterprise in Orcharding," 2: 818, June, 1924.
Lancaster, Dabney S., "Judging Contests in Virginia," 2:532-533, March, 1924.
McDonald, H.M., "The Magnitude of Agricultural Projects," 2:627-630, April, 1924.
Montegut, J.O., "Linking Class Instruction in Agriculture with the Agriculture of the Community," 2:1031-1032, November, 1924.
Moore, James H., "Securing Community Interest in Vocational Agriculture," 2:537-538, March, 1924.
Myers, Charles Everett, "Comparative School Mortality and Farming Activities of Former Secondary Students of Vocational Agriculture," 2:1104-1105, December, 1924.
Myers, Charles Everett, "Criteria for a State Program for the Preparation of Agricultural Teachers," 2:446-449, February, 1924.
Myers, Charles Everett, "How Are Principles Established?" 2:805, June, 1924.
Payne, W. L., "Selling Vocational Agriculture to the Community," 2:374-375, January, 1924.
Payne, Walter L., "The Free Cow Testing Association of the Richmond High School," 2:1102-1103, December, 1924.
Pope, James D., "Recruiting Vocational Students from Boys' Clubs," 2:369-370, January, 1924.
Pope, James D., "Vocational Guidance through Junior Projects," 2:454-456, February, 1924.
Roberts, R.W., "Terracing Hill Land," 2:540, March, 1924.
Scott, A.S., "Community Work by the Vocational Teacher," 2:631-632, April, 1924.
Shanklin, A.E., "Educational Exhibit at a County Fair," 2:1103-1104, December, 1924.
Skinner, John J., "A Vocational Department of Agriculture as an Integral Part of a School System," 2:974-976, October, 1924.
Smith, R.B., "How Can We Measure the Actual Results in Vocational Agriculture?" 2:1035-1039, November, 1924.
Smith, R.B., "Report of the Arkansas State Fair for Students of Vocational Agriculture," 2:909, September, 1924.

Snedden, David, "Agricultural Education: Desirable Programs for the Future," 2:1032-1035, November, 1924.
Stewart, R.M., "The Challenge of Unidentified Farm Youth," 2:621-627, April, 1924.
Stimson, R.W., "A Remarkable Record," 2:976-977, October, 1924.
Stimson, R.W., "Walter H. French," 2:977-979, October, 1924.
Stoughton, W.F., "The Advisory Board," 2:981, October, 1924.
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"Using Students as Promotional Agents," 2:718-722, May, 1924.
Wheeler, John T., "Some Problems in the Placement of Graduates from Departments of Vocational Agriculture," 2:533-537, March, 1924.
Wilkey, C.R., "Four Years of Vocational Agriculture," 2:979-981, October, 1924.
Wiseman, C.R., "Farm Home and Social Experiences of Farm Boys," 2:806-808, June, 1924.
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1925 Bradford, Lawrence A., "Creating the Question," 3:7-8, January, 1925.
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Hancock, Homer, "What Vocational Training Is Worth to Farmers," 3:11-12, January, 1925.
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Lancelot, W.H., "Results Count," 3:11, January, 1925.
Payne, W.L., "The Community Fair," 3:8-9, January, 1925.
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Note: This publication was discontinued after the January, 1925, issue.

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Year	Author, Title, Volume, Pages, Month, Year
1926	Allen, H.B., "More Evidence for Vo-Ag," 1:20, 21, August, 1926.
	Blackwell, J.D., "How One Department of Vocational Education in Agriculture Has Aided in the Development of a State Program of Vocational Agricultural Education for Maryland," 1:9-11, August, 1926.
	Coggin, J.K., "What Is the Direct Effect of Teaching Vocational Agriculture on Farming Practices?" 1:16, August, 1926.
	Dyar, W.S., "A Seed-Corn Testing School for Farmers," 1:9-10, April, 1926.
	Givens, H.C., "Vocational Education in Arkansas," 1:5-6, August, 1926.
	Newman, Walter S., "Comparison of Day Unit and Full-Time Instruction in Vocational Agriculture," 1:17-18, April, 1926.
	Newman, Walter S., "Vocational Agriculture Shows Steady Growth," 1:19, August, 1926.
	Pearson, J.H., "Farm Boys Take Advantage of Part-Time Instruction in Agriculture in Nebraska," 1:13, April, 1926.
	Peterson, Verd, "Recent Developments in Vocational Education in South Carolina," 1:17, April, 1926.
1927	Blackwell, J.D., "The Agricultural Section," 2:24-25, February, 1927.
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APPENDIX F

CHRONOLOGICAL LISTING OF SELECTED ARTICLES FROM THE AGRICULTURAL EDUCATION MAGAZINE, INDUSTRIAL EDUCATION MAGAZINE, AND MISCELLANEOUS PERIODICALS

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Manual Training and Vocational Education	vol. 16-17, Sept., 1914-June, 1916
Manual Training Magazine	vol. 18-23, Sept., 1916-June, 1922
Industrial Education Magazine	vol. 19-41, July, 1922-Nov., 1939

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