July , 1940

To the Committee on Graduate Study:

I am submitting to you a thesis written by Hornsby Joseph Fowler entitled "Required Teaching Time in Vocational Agriculture". I recommend that it be accepted for nine quarter hours credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Education.

H. E. Fitzgerald
Major Professor

We have read this thesis and recommend its acceptance.

L. L. Wylie

E. H. Berg

A. J. Pautler

Accepted for the Committee

V. C. Smith
Dean of the Graduate School

TEACHER RESPONSE TO REQUIRED TEACHING TIME IN VOCATIONAL AGRICULTURE

A THESIS

Submitted to
the Committee on Graduate Study
of
The University of Tennessee
in
Partial Fulfillment of the Requirements
for the degree of
Master of Science

---

by

Hornsby Joseph Fowler

August 1940

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
	Early government studies of vocational education	1
	Passage of the Smith-Hughes Act	3
	Source of federal time requirements	4
	Time requirement for vocational agriculture	6
	Statement of major and minor problems of the study	7
II.	GENERAL PROCEDURE	9
	Study of provisions of the vocational education acts	9
	Sources of information	10
	Procedures used in studies of minor problems	11
	How conclusions and suggestions were arrived at	20
III.	REASONS FOR LONG VOCATIONAL PERIODS	21
	Development of skills for farm jobs	23
	Educational doctrines	23
	Classroom exercises inadequate	24
	Teaching on the farm	25
	Early ideals for teaching time in vocational agriculture	27

25 Jan 41 SLB.90

171961

CHAPTER PAGE

IV. EDUCATIONAL TRENDS IN RURAL HIGH SCHOOLS..... 23
Flexible schedules of first rural high schools . 28
Consolidation of rural schools 29
Forces leading toward formal education 30
Increase in time given to formal education subjects 32
V. ACTUAL TEACHING TIME IN VOCATIONAL AGRICULTURE ... 34
Length of time in class periods 34
Three devices for fitting vocational agriculture schedules into school schedule 35
Ideal schedule of early writers compared to present schedules..... 41
Impossibility of fitting ideal schedules to present school systems 42
VI. PERCENT OF STUDENTS NOW GETTING SEVEN HOURS OF INSTRUCTION EACH WEEK..... 46
Difference between percent of accomplishment and percent of students getting seven hours each week 49
Class schedules that meet time requirement..... 50
Degree of accomplishment in schools on clock hour basis 52
Percent of accomplishments among students of Powell High School 53

CHAPTER PAGE

VII. EFFECT OF TEACHING LOAD ON TEACHING TIME 54

Teaching load outside of all day classes 56

Teaching load in all day classes 59

VIII. PREFERENCE OF TEACHERS FOR TEACHING TIME 63

Method of checking procedures 64

Extent of use of procedures 65

Preference of instructors for teaching time in procedures 66

IX. FACTORS AFFECTING AMOUNT AND DISTRIBUTION OF TEACHING TIME 68

List of factors 68

Instructors' estimate of factors effecting teaching time 69

X. DEVICES USED BY INSTRUCTORS TO PROVIDE SEVEN HOURS TEACHING EACH WEEK 72

List of devices 72

Extent of use of different devices 73

Discussion of use of devices 74

XI. THE SITUATION IN NEIGHBORING STATES 86

Letter to other states and replies 86

The North Carolina Study 89

XII. CONCLUSIONS AND RECOMMENDATIONS 99

Cooperation between agriculture instructor and principal 99

CHAPTER PAGE

The hardships and impossibilities of the present situation 100

Facing the situation realistically 103

Suggested change in policy of Office of Education. 106

Linking supervised farm program and class instruction together as organized instruction 107

SELECTED BIBLIOGRAPHY 112

APPENDIX 115

LIST OF TABLES

TABLE		PAGE
I.	Average Teaching Time per Class per Session in Tennessee High Schools	32
II.	Percent Groups of Schools Classified According to Percent of Students Receiving Seven Hours of Instruction Each Week	52
III.	Percent of Students by Groups Fulfilling the Time Requirement, Powell High School 1939-1940	53
IV.	Group Factors Indicating Average Out-of-School Teaching loads of Different Percentage Groups	57
V.	Average Enrollment of All-day Students in Percentage Groups	60
VI.	Extent of use of Teaching Procedures in Vocational Agriculture	65
VII.	Preference of Instructors for Teaching Time in Different Procedures	66
VIII.	Factors Effecting Time Distribution in Vocational Agriculture	69
IX.	Devices Used by Instructors to Provide Seven Hours of Instruction Each Week	73
X.	Comparison of Time Schedules of Schools in North Carolina and Tennessee Studies	92

LIST OF FORMS

FORM		PAGE
1.	Form used for getting information at the Department of Education, Vocational Education Division, Nashville, Tennessee	14
2.	Letters sent to Vocational agriculture instructors in Tennessee	17
3.	Questionnaire sent to vocational agriculture instructors in Tennessee	18
4.	Form used for tabulating and summarizing information on forms 1 and 2	21

LIST OF FIGURES

FIGURE PAGE

1. Schedule of vocational agriculture classes at Paris High School 1938-1939 35
2. Class schedule illustrating device providing for extra instruction during free class periods that are not continuous with the regular periods .. 37
3. Class schedule illustrating the combining of classes to afford extra class periods for giving extra instruction 39
4. Suggestion for the vocational half-day schedule 41

ACKNOWLEDGMENT

The following persons have contributed generously of their time and efforts in helping to make this study:

Mr. G. E. Freeman, who made available the records of the Vocational Education Department at Nashville.

Dr. A. J. Paulus, who supervised the completion of the thesis in the absence of the major professor.

The eighty-five teachers of vocational agriculture who filled and returned questionnaires.

Professor N. E. Fitzgerald, my major professor, under whose advice and direction the study was planned and made.

I am deeply grateful to each for their cooperation.

CHAPTER I

INTRODUCTION

In accordance with an act of congress approved January 20, 1914, a commission on national aid to vocational education was appointed by President Woodrow Wilson. This commission consisted of nine members. It included Senator Hoke Smith as chairman and Representative D. M. Hughes. Both of these members of congress were from Georgia. The other seven members were selected because of their experience in education work in the fields of labor, industry, and agriculture. This commission was to make a study of the educational needs in the fields and make recommendations to the federal government as to how these needs could be met.

Part of the report of this commission read as follows:

> There is a great and crying need of providing vocational education of this character for every part of the United States to conserve and develop our resources; to promote a more productive and prosperous agriculture; to prevent the waste of human labor; to supplement apprenticeship; to increase the wage earning power of our productive workers; to offset the increased cost of living. Vocational education is therefore needed as a wise business investment for this nation, because our national prosperity and happiness are at stake and our position in the markets of the world cannot otherwise be maintained.[1]

Two of the recommendations of the commission were as follows: 1, The education sponsored should be less than college grade. 2, This education should receive federal aid.

1. Report on National Aid to Vocational Education. Document 1004. Vol. I & 2. 63rd Congress, 1914.

It was pointed out that many of the students that would be given this training would not go to colleges. The course would have to equip these students to earn their living without a higher education. It was further suggested that better facilities for training the students under actual working conditions are offered in the high schools than in the colleges. Finally it was suggested that this course would be given more in the formative stage of the students life than they would be in while attending college. For these reasons the commission recommended that vocational education should be less than college grade.

There were many fundamental and sound reasons why this education should receive federal aid. Among the more important of these were: 1, The federal government had already made extensive studies in the field of vocational education and knew a great deal more of its needs than the individual states. 2, The federal government had far greater facilities for research work in this field than the individual states. 3, Not all of the states would be able to finance an effective program without aid. 4, Better progress over the country as a whole could be made by a unified system of vocational education under the direction of a federal agency than could be made by separate state systems. The federal government would purchase the right to plan and direct this system by giving financial aid to the states. 5, Vocational education is essentially a national responsibility because the progress and prosperity of the nation as a whole depends upon the development of industry, agriculture,

and commerce within the individual states.

The report stated that Germany and other foreign countries were far in advance of the United States in vocational education.

An act providing for the promotion of vocational education by the federal government and embodying the suggestions of the commission was passed by congress and approved by President Wilson February 23, 1917. It was called the Smith-Hughes Act after its two congressional co-authors who had been members of the commission.

Provision was made in this act for creating a federal board for vocational education. In the beginning this board consisted of the secretaries of labor, commerce, and agriculture, The United States Commissioner of Education, and three citizens to be appointed by the president of the United States. One of the citizens was to represent the manufacturing and commercial interests, one was to represent labor, and the other was to represent agriculture. This board was to administer the act for the federal government. It was to set up certain minimum requirement that would have to be met by each state before that state would become eligible to receive federal funds. These minimum requirements would represent the least that a state could do to establish and maintain an efficient vocational education system. Each year state plans for vocational education would have to show that the minimum requirements would be met. Money

would be paid by the federal government to each state upon the approval of the state plans.

From the beginning leaders in the vocational agriculture movement realized that long periods of organized instruction was necessary for effective teaching. When this course was first made a part of the curriculum of many rural high schools, practically all of those schools were operating on a schedule of eight recitation periods daily each period being 45 minutes in length. The Federal Board for Vocational Education decided to accept state plans providing for two double periods each day given to vocational agriculture classes. That is each vocational agriculture class was taught for 90 consecutive minutes each day.

Later the Federal Board for Vocational Education was dissolved, and its functions and authority were transferred to the United States Office of Education.

During the years of about 1925 to 1935 there came a marked change in the daily class schedules of the rural schools. The 45 minute class period became the exception, and the 60 minute class periods became the rule. The reasons for this change will be discussed in a later chapter.

As each school changed from the 45 minute to the 60 minute period there immediately arose for the vocational agriculture instructor new problems of adjustment in order to get in 450 minutes of organized instruction each week.

In 1936 the United States Commissioner of Education ap-

pointed two committees to study new problems arising in vocational education and to make suggestions that would guide the Office of Education in formulating a new policy that would meet changed conditions. One of the problems studied by these committees was that one dealing with the amount and distribution of time in the teaching of vocational agriculture. The first of the two committees represented the professional staff of the Office of Education. It was made up of the following members: Edna P. Amidon, Home Economics Agent, North Atlantic Region. D. M. Clements, Agriculture Agent Southern Region. R. V. Billington, Trade and Industrial Agent, Central Region. Mr. Billington was made chairman of this group. The second committee was to act as a technical advisory committee on general policies. It was composed of the following members: E. L. Bousher, State Director of Education, Columbus, Ohio; Clyde A. Erwin, State Superintendent of Public Instruction, Raleigh, North Carolina; George P. Hambrech, Executive Officer and State Director for Vocational Education, Madison, Wisconsin; J. B. Hobdy, State Director of Vocational Education, Montgomery, Alabama; L. A. Wilson, State Director of Vocational Education, Albany, New York; R. O. S mall, State Director of Vocational Education, Boston, Massachusetts; L. H. Dennis, Executive Secretary, American Vocational Association, Washington, D. C; C. F. Klinefelter, Educational Consultant, Office of Education, Washington, D. C; J. C. Wright, Assistant Commissioner of Vocational Education, Office

of Education, Washington, D. C., Chairman. Mr. Hambroch was president of the American Vocational Association. The office of Education gave special credit to these two committees for the formulation of the new policies made necessary by the passage of the George-Deen Act.

In recommending a new policy governing the minimum time requirement for organized instruction in vocational agriculture the combined report of these two committees said in part,

> 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 for not less than seven clock hours a week for such instruction. Where the period is less than sixty minutes in length five double periods a week be required.[2]

This recommendation was accepted by the Office of Education and is the basis for the present time requirement policy. Each year the state plans must show provisions for meeting this requirement before federal funds for the state are made available.

Since there are only five school days to the week the requirement would not be met by scheduling each vocational agriculture class for one hour each day. Two extra hours each week must be provided. This requirement is proving hard to meet, and the difficulty increases as the schools grow in size of student body in the variety of subjects taught.

The major problem of this study is to determine a fair and practical adjustment between the requirement of the Office of Education as to teaching time in vocational agriculture and the class schedules of the rural schools, particularly those schools on the clock hour basis.

There are nine minor problems to be considered. They are as follows: 1. To determine why vocational agriculture classes need seven hours each week of organized instruction in schools on the clock hour basis. 2. To determine actual teaching time given to students by vocational agriculture instructors in Tennessee. 3. To determine what percent of the students of vocational agriculture in Tennessee are actually receiving seven hours of organized instruction each week. 4. To determine the effect of the teaching load of the instructor on the teaching time in vocational agriculture. The teaching load to include the size of the day classes, and time given to evening school, part-time and day-unit classes and to future farmer activities. Evening schools are given in out of school hours for adult farmers, part-time classes are given for out of school boys of school age who are preparing to enter the business of farming, and day-unit classes are given to boys in the seventh or eighth grades who will soon enter the high schools. Future farmer activities refers to the activities of the organization that is made up of members of the high school all-day classes and sponsors their social, economic,

educational, and recreational group activities. 5. To determining the vocational agriculture instructors' preference as to the amount and distribution of teaching time in vocational agriculture. 6. To determine the school factors that effect the amount and distribution of teaching time in vocational agriculture in Tennessee. 7. To determine the methods by which vocational agriculture instructors of Tennessee provide seven hours of organized instruction each week to their students. 8. To determine how other states with educational and farming conditions somewhat similar to those of Tennessee are solving the problems. 9. To draw conclusions from the data and information studied, and to offer suggestions for the solution of the major problem.

CHAPTER II

GENERAL PROCEDURE

The problem of amount and distribution of teaching time in vocational agriculture is perhaps one of the most vital of all effecting the future of vocational agriculture. A thorough study of this problem could not be made without knowing the provisions of the acts creating a system of vocational education in the United States. Copies of these acts were found in the appendices of text books on vocational agriculture. A brief history of the drawing up and passage of the Acts was found in educational bulletins on file in the Department of Agricultural Education, University of Tennessee. These bulletins also gave the reasons for drawing up the acts, and showed how the policies governing their administration were formulated.

Since the problem deals with an adjustment between the time needs of vocational agriculture classes and the time schedules of the rural schools in which vocational agriculture is taught, it was necessary to give the present set up of the rural school systems and the educational trends of that system. Since a record of the high school schedules are only on the individual reports of the principals in the State Department of Education, it was impossible to get these records for the entire state. For the purposes of this study, however, sufficient information

was gotten from the schedules of those schools that had vocational instructors who replied to the questionnaire sent in connection with this study. These schedules were taken from the files of the Vocational Agriculture Division of the Department of Education. Information on the growth and curriculum trends for Tennessee was found in theses written by former candidates for the Masters' Degrees. These were on file in the University library. Since there has been a definite trend towards the one hour period during the past few years, it was expected that there would be an abundance of information on this subject. Such was not the case. A search of the educational files from 1922 through 1939 disclosed only three articles on the advantages or disadvantages of the hour period. Two of these were written by Professor J. B. Paul and concerned class periods in the universities. The other article concerned a study of the hour period in high schools in Southern California and has been quoted in this study. Information concerning the change from the forty-five minute period to the hour period in Knox County schools was gotten from a personal interview with Superintendent L. H. Brickey. All information listed in this paragraph was used in developing the situation as it exists in the rural school system.

The following paragraphs will outline the procedures used in attacking the minor problems. Each minor problem will be listed in the order given in the introduction and the

procedure used on that particular minor problem will be outlined.

1. To determine why vocational agriculture classes need seven hours each week in schools on the hour period basis. In order to establish the need for ample time in the teaching of vocational agriculture, particularly with reference to the long class periods, I reviewed the old text books on vocational education used in teaching University of Tennessee agricultural education students of the past. These books were used to inspire the students with the aims, objectives, and ideals of vocational agriculture. They suggested and outlined effective procedures in attaining these. Favorable conditions for the carrying out of these procedures were described, and the future instructors were urged to bring about these conditions in so far as they were able to do so. The teachings of these texts were sound. They did not anticipate the strong movement of the rural schools in the direction of formal education. But the best situations and procedures possible for the most effective carrying out of the purposes of the acts creating the vocational agriculture departments are contained within their pages.

A rich source of information on the time needs of vocational agriculture is to be had from the instructors teaching experiences. Who better than he can realize the effectiveness of teaching under farm conditions and the

ineffectiveness of classroom textbook teaching? Who better than he can estimate the amount of time needed for field trips, farm shop periods, laboratory periods, and other procedures that will make the teaching situations similar to the farm situations. I have drawn from my own teaching experiences in presenting the time needs of vocational agriculture, and from information received from vocational agriculture instructors on Form 5 shown in this chapter.

2. To determine actual teaching time given to students by vocational agriculture instructors of Tennessee. This refers to the actual class time scheduled by the instructor and constituting a part of the class schedule for the entire school. A large portion of the information that I would need was on file at the Vocational Education Division of the Tennessee Department of Education. Included in this information was: 1, the names and addresses of the schools having vocational agriculture departments; 2, the names of the vocational agriculture instructors in these schools; 3, the schedules of classes for these schools; 4, the enrollments of the agriculture classes; 5, information as to whether the vocational agriculture teacher was on full or part-time; 6, the vocational agriculture instructors' evening school, part-time, day-unit, and future farmer programs. A form was designed for getting all this

information for each department on one sheet. A trip was made to Nashville in June, 1939, and forms were filled in for all the departments in the state. A copy of this form follows.

TEACHING TIME IN VOCATIONAL AGRICULTURE

Thesis of H. J. Fowler

Survey form for information from State Department of Vocational Agriculture

Period	Monday	Tuesday	Wednesday	Thursday	Friday

School _____

Teacher _____

Address _____

Full time _____ Part-time __

Enrollment of all day classes

Agriculture I _____

Agriculture II _____

Agriculture III _____

Agriculture IV _____

Time given to other activities

	Evening School	Part-time	Day-unit	F.F.A	Total
Number of classes or meetings					
Length of time for each class(average)					
Number of supervisory visits					
Total enrollment					
Average attendance					

Form 1. Form used for getting information at the Department of Education, Vocational Education Division, Nashville, Tennessee.

3. To determine what percent of the students of vocational agriculture in Tennessee are actually receiving seven hours of instruction each week. The information on the forms filled in at the state office would not give the students who made up their time through special devices outside the regular scheduled classes. This information could only be had from the individual instructors. There was other needed information that only the instructors could give. It was impossible to interview each of these instructors individually, nor was it possible to visit a sufficient number of them in their teaching situations to give a true representation of the situation for the entire state. A questionnaire to be filled in by the vocational agriculture instructors over the entire state was the only means by which I could obtain this information. Information needed in this study that could only be had from the vocational agriculture instructors included; 1, the teaching procedures used and the number of times each procedure was used each year; 2, the instructors estimate as to the minimum length of the teaching period needed for the effective use of the procedure; 3, the devices used by the instructors to give the students added time in organized instruction; 4, the factors in the schools that effected the amount and distribution of teaching time in vocational agriculture.

A questionnaire was made that gave space for checking answers to the above questions, or for writing in the information requested. Added space was given to take care of any additions or suggestions that the instructor might care to make.

This questionnaire asked for information that could be given by the instructors as accurately and as easily on a questionnaire as it could be given in an interview. The questions bear directly upon teaching situations and arrangements with which the instructors come in daily contacts. The questionnaires were sent out with letters assuring the instructors that their answers would be treated with strict confidence. Most assuredly some of the information asked for was about things on which no accurate record had been kept, and the reply was based on the instructor's estimate. It is not claimed that this information is entirely accurate. It is believed, however, that it is sufficiently accurate to give a true picture of the situation in regards to the state.

A copy of the letter and the questionnaire sent to each instructor is given on the following pages as Form 2 and Form 3 respectively.

Concord, Tennessee
July , 1939

To Teachers of Vocational Agriculture
State of Tennessee

Fellow Teachers:

I am writing a thesis on " Teaching Time in Vocational Agriculture". In order to make an intelligent study of this subject I will need information from the teachers on the job. I will greatly appreciate it if you will fill out the questionnaire that I am enclosing and return promptly in the stamped envelope. Your answers will be treated with strict confidence.

Very truly yours,

H. J. Fowler
Powell High School

HJF:cf

Form 2. Letter sent to vocational agriculture instructors in Tennessee.

QUESTIONNAIRE TO VOCATIONAL AGRICULTURAL TEACHERS
TEACHING TIME IN VOCATIONAL AGRICULTURE

Teacher _____ School _____

Address _____

I. Check minimum length of period sufficient to use procedure effectively and the approximate number of times or periods the procedure will be used each year in the entire agricultural department. Use blank lines for other procedures.

Procedure in teaching	No. times yearly	Minimum length of period			
		45	60	90	120
Field trip					
Shopwork					
Laboratory					
Classroom					

II. Check here the device you have used to give vocational agricultural students additional time for instruction. Use blank lines for other devices.

1. Combining classes
2. Use free period for instruction
3. Use long and short periods on alternating days
4. Individual assignments (home or out of class)

III. Indicate percent of your students that actually received 7 hours of instruction each week in 1938-39: percent _____

IV. Check the factors that in your school effect the amount and distribution of teaching time in vocational agriculture. List other factors on blank lines.

1. Size of agriculture classes (all day)
2. Teaching burden, including Evening School, Part-time, Day unit, and F.F.A. activities.
3. Lack of cooperation of County Superintendent
4. Lack of cooperation of principal
5. Lack of cooperation of other teachers
6. Inability to make schedule of agricultural classes with lengthened periods conform to schedule of other high school classes.

V. Use this space for any suggestions you care to make

Form 3. Questionnaire sent to vocational agriculture instructors in Tennessee

4. To determine the effect of the teaching load of the instructor of teaching time in vocational agriculture. The information needed for this study would be contained on the form filled in at the Office of the Department of Educational Division, Nashville, Tennessee.

5. To determine vocational agriculture instructor's preference as to the amount and distribution of teaching time in vocational agriculture. This information would be given by the instructors in filling in the questionnaire.

6. To determine the school factors that effect the amount and distribution of teaching time in vocational agriculture in Tennessee. The questionnaire would contain information needed for this minor problem.

7. To determine the methods by which vocational agriculture instructors of Tennessee provide seven hours of organized instruction each week to their students. The information needed for this minor problem would also be found in the questionnaire.

7. To determine how other states with educational and farming conditions somewhat similar to those of Tennessee are solving the problems. A letter requesting information on amount and distribution of teaching time in vocational agriculture was sent to the head of the Department of Agricultural Education in each of Tenn-

essee's neighboring states. A request was made that if any study had been made of the problem, all data available concerning that study be sent to be compared to the study being made in Tennessee. The departments to which letters were sent included those of the University of Georgia, Alabama Polytechnic Institute, University of North Carolina, Clemson College of South Carolina, West Virginia University, Ohio State University, and the University of Kentucky.

9. To draw conclusions from the data and information studied and to offer suggestions for the solution of the major problem. These conclusions and suggestions will be given in the final chapter in the light of the results of the study.

The information was tabulated as shown on Form 4. Conclusions and suggestions in the final chapter are given in the light of the summaries made from the columns of Form 4.

Item	Group	Section
Number of school		
		School (1938-1939)
		Teacher (1938-1939)
Full or part-time agriculture		
45, 60 min. or irregular periods		
High school students		
7th and 8th grade students		
Schools		Part-time schools
Number of meetings		Part-time schools
Length of meetings		Part-time schools
Enrollment		Part-time schools
Schools		Evening Schools
Number of meetings		Evening Schools
Length of meetings		Evening Schools
Enrollment		Evening Schools
Times Used	Field trip	Teaching Devices
Minimum length	Field trip	Teaching Devices
Times used	Shop	Teaching Devices
Minimum Length	Shop	Teaching Devices
Times Used	Lab.	Teaching Devices
Minimum length	Lab.	Teaching Devices
Times used	Field trip	Teaching Devices
Minimum length	Field trip	Teaching Devices
Times used	Shop	Teaching Devices
Minimum length	Shop	Teaching Devices
Times used	Lab.	Teaching Devices
Minimum length	Lab.	Teaching Devices
Combining classes		Devices to meet the Thr week requirement (check)
Use free period for instruction		Devices to meet the Thr week requirement (check)
Use of alternate long and short period		Devices to meet the Thr week requirement (check)
Individual out-of-class assignments		Devices to meet the Thr week requirement (check)
Future Farmer Programs		Devices to meet the Thr week requirement (check)
Supervised study		Devices to meet the Thr week requirement (check)
Combining ag. and english programs		Devices to meet the Thr week requirement (check)
Supervision of farm programs		Devices to meet the Thr week requirement (check)
Out-of-school hours		Devices to meet the Thr week requirement (check)
Saturday classes		Devices to meet the Thr week requirement (check)
All-day classes at night		Devices to meet the Thr week requirement (check)
Dividing classes		Devices to meet the Thr week requirement (check)
Size of classes		Factors effecting time Distribution (check)
Teacher's burden		Factors effecting time Distribution (check)
Lack of cooperation of County Supt.		Factors effecting time Distribution (check)
Lack of cooperation of principal		Factors effecting time Distribution (check)
Lack of cooperation of other teachers		Factors effecting time Distribution (check)
Duties as coach or principal		Factors effecting time Distribution (check)
Inability to make agriculture schedule conform to other classes		Factors effecting time Distribution (check)
Transportation		Factors effecting time Distribution (check)
Community service		Factors effecting time Distribution (check)
Lack of teaching equipment		Factors effecting time Distribution (check)
		Remarks
Percent of students receiving full time		

Form 4. Form used for tabulating and summarizing information on forms 1 and 3.

CHAPTER III

REASONS FOR LONG VOCATIONAL PERIODS

If efforts are to be made to adjust the vocational agriculture class periods to the class schedules of the rural schools so that each class will be given seven hours of organized instruction each week, then there must be fundamental and sound reasons for such a time requirement. In order to find out why the Federal Board for Vocational Education and its advisors in the beginning considered it necessary to require double class periods of ninety minutes each, and why the United States Office of Education now considers it necessary to require seven hours of organized instruction each week, we must consider the nature of the proposed instruction and some fundamental laws of education.

Let us remember that the purpose of this education is to fit young men of less than college grade for useful employment and that it was intended only for those,

> who entered upon or are preparing to enter upon the work of the farm or the farm home.[1]

In other words the fundamental purpose of the Act was to give a vocational education.

The term 'useful employment' was not interpreted as meaning employment as farm managers only. It was interpreted to mean employment as farm laborers also. Those who owned their own farms, operated their home farms, or took college

1. Smith-Hughes Act Section 10.

agricultural training in farm management would likely profit from a managerial course in agriculture in the rural high schools, but all trainees in vocational agriculture would need training in operations involved in doing farm jobs.

If a student is to be educated to become an efficient farm laborer he must be taught to plow, to prune fruit trees, to feed and take care of farm stock properly, to make handy farm equipment, to do repair work on the farm, and to perform other common farm jobs too numerous to name. He must not only be taught to do these jobs, but he should be trained so that he can do them better than the farmers of the community have been doing them. Progress in agriculture will be made by improving on farm practices, and not by becoming static.

Training for farm jobs involves the developing of skills. Skills are developed through practice and not by formal recitations.

It may be well to consider here some of the established educational doctrines.

The old doctrine of formal discipline taught us that mental training could be transferred wholesale from one subject to another. It was asserted, for instance, that memory is a faculty which, when trained by the study of one subject such as Latin, would function adequately in the remembering of names and faces; and that reasoning when developed in mathematics will work equally well in trade. If this doctrine were true

education would be simple indeed. Only three or four subjects would be necessary in the curriculum of any school to develop the latent powers of reasoning in the minds of its pupils.

However, research and experience have proved that education is not so simple. Thorndike has shown that there is transfer of training only

> in so far as the two functions have as factors identical elements.[2]

The situations must be similar to farm situations in training effectively the different farm jobs.

It has also been abundantly demonstrated that learning is made much more effective and lasting when properly motivated. There must be something in the matter being studied that will catch and hold the interest of the learner for learning to be most effective. One of the best sources of interest in vocational subjects is for the student to feel that what he is learning is useful.

> When knowledge is divorced from the consciousness of usefulness, it is extremely difficult to motivate.[3]

All this means that students in the classroom studying only from printed texts and other printed matter cannot be effectively trained to become successful farmers. That farmer training can only be accomplished under farm conditions[4] was an accepted fact by early leaders of the vocational agriculture

---

2. Edward L. Thorndyke, Educational Psychology. Briefer Course, p. 268.

3. W. W. Charters, Curriculum Construction, p. 17.

4. John T. Wheeler, Methods in Farmer Training, p. 112.

movement. The schools had no farms so the logical thing to do was to take the students to the farms in the community for instruction purposes. This meant that schools located in farming communities were far better suited for this type of instruction than schools in rural towns or in the suburbs of large cities. Farm shops could be built in the schools that would be efficient in teaching farm shop work, but even these would be far more effective if there were farms close by to send machinery to be repaired and for which the students might make handy farm equipment. The ideal way for the student of vocational agriculture to learn is to learn by doing.

In group instruction, however, it is not always possible for a student to participate actively in the class exercise. It may often be necessary for him to learn by observing. But even the learning by observing a demonstration can be made much more effective in the field than it can be made in the classroom.

A student may be shown fertilizer formulas on sacks in the classroom or in the field without being impressed. He may watch the instructor in the field place the fertilizer in the crop rows with only a feeling of boredom. When he is taken back to that field, however, and sees the difference between the crops where fertilizer was applied and the crops where there was no application, he becomes suddenly interested in the whole procedure. All that he observed the instructor do in the earlier demonstra-

tion is recalled with new meaning and the student is soon imitating the things that he had seen.

Far more effective is the instruction in which the student takes an active part in the exercises. You may take a high school class to an orchard that has been improperly pruned, and show them the mistakes that were made in the earlier pruning. Then you may demonstrate on one tree the proper way to prune, being careful to outline a few simple rules to follow in order that the student may have a track to guide him in his early uncertain efforts. Give the student the pruning tools and start him on the job for himself, offering suggestions now and then, and showing him his mistakes. You will be surprised at how quickly a large number of the class will become proficient and self confident at the job. Perhaps it is the experience of practically all vocational agriculture instructors that a large number of their former students are in demand for this type of work throughout the community.

The kinds of field instruction suggested in the foregoing paragraphs take long periods of time. It also takes time for students in the farm shop to take out their tools, do their shop work, clean the tools and restore them to their proper places.

When vocational agriculture courses were first made a part of the curriculum of rural high schools the agricultural classes were in nearly all cases given a double 45 minute period or 90 minutes for instruction. Even this did not seem

sufficient time to those who did the early planning for agricultural classes. Wheeler wrote,

> It would seem that the vocational half day is well adapted to farmer training courses. Such an arrangement allows for all academic subjects to be scheduled during the morning, for example, leaving the afternoon free for vocational courses or vice versa. This provides for the desired flexibility in the vocational classes' time, and makes it easily possible for a boy, a group of boys or a whole class to turn from school work to farm work at the "peak load" periods in project operations without effecting any school work outside the agricultural classes. However, desirable the vocational half day may be from the standpoint of farmer training, there is a widespread tendency at the present time to use a ninety minute period for farmer training courses in high schools.[5]

Wheeler also thought of rating high school departments of vocational agriculture on a time efficiency basis. In schools having the vocational half-day he suggested that they be given a time efficiency rating of fifty percent. Those schools devoting less time than the half-day to vocational agriculture would be rated according to the proportion of time given to agriculture to the length of the school day.[6]

Apparently these early planners of a system of vocational agriculture hoped and expected that the rural school officials would realize the great importance of vocational training in these schools and would adjust the school programs more and more to meet these needs. However, there were tremendous forces pulling these school programs in exactly the opposite direction.

5. Ibid., pp. 253-254.

6. Ibid., p. 96.

CHAPTER IV

EDUCATIONAL TRENDS IN RURAL HIGH SCHOOLS

From the beginning it has been planned that the American rural schools would be the vehicle that would carry the departments of vocational agriculture. The Smith-Hughes Act requires that this instruction be given in schools under public supervision or control.[1] There are no other schools that have the facilities for taking care of this program.

So it is important to the future of vocational agriculture to take account of educational trends in the rural schools of today. If the purposes for which this system of education was established are to be fulfilled, then the rural schools must be adjusted to meet the needs of vocational agriculture or the teaching of vocational agriculture must be adjusted to fit our system of rural schools.

What are the more recent educational trends in our rural schools?

When vocational agriculture was first introduced into the rural school system, the average country high school was still a small school with few teachers, and it had a relatively flexible program. Vocational training could be introduced into its curriculum without upsetting the rest of the program to a very marked degree.

1. Smith-Hughes Act, Section 10.

There was already in progress an extensive program of rural school consolidations. In Tennessee there were 531 rural high schools in the school year of 1923-24 with an enrollment of 34,361 students for an average of about 66 students to each school. There were 432 schools in the school year of 1938-39 with 61,301 students enrolled.[2] This was an average of about 142 students to each school. The consolidation movement is slowing down but the size and enrollment of the schools continues to grow.

It was felt that the consolidated schools were an advantage to the teaching of vocational agriculture. It took a large number of farm boys a long way from their home farms, but it gave the agriculture instructor a larger number of students from a wider territory. It often was located in a country town or close to a large city some distance removed from the main farming districts, but it had more funds appropriated to its use for the purchase of laboratory and classroom equipment. Larger and better equipped farm shops could be provided. Also, vocational agriculture instructors are comparatively well paid and the consolidated school could better afford their salaries. On the whole it would seem that consolidation of rural schools in itself should be an advantage rather than a disadvantage to the development of vocational agriculture.

---

2. Annual Reports Tennessee Department of Education 1923-1939.

However, there were new forms and practices creeping in these enlarged schools. Higher paid and better trained teachers in other subjects were being brought in. They had new ideas. The teaching of English was divided into Rhetoric, Composition, American Literature, English Literature, Public Speaking and other parts. History and Mathematics were likewise divided. Enrollments grew, new teachers were added and the school schedules became progressively less flexible. An increasing number of conflicts was faced by the vocational agriculture instructor who tried to arrange for long periods of organized instruction to provide the vocational training so necessary to an efficient course.

Soon the teachers and the officials of these enlarged schools became dissatisfied with the forty-five minute periods. Studies were made of the advantages of the hour period. One of these studies made in 1934 in Southern California showed the following results:

1. High school students learn more per dollar spent with hour periods than with forty-five minute periods.
2. The actual cost of operation is less under the hour period schedules than under the forty-five minute period schedules.
3. Students time each school day under teacher direction increased from 225 minutes to 300 minutes.
4. More room space was made available each period under the hour schedules.
5. The hour schedule was more satisfactory to the teacher.

The most important savings under the hour schedule were attributed to the following factors:

1. Less waste of time in the shifting of classes.
2. More time was allowed the student in his classrooms

> in proportion to the time he spent in the study hall. This gave more time for supervised study under the classroom teachers and lowered the number of study hall teachers needed for the school system.
>
> 3. Groups of students were taught in larger units thus effecting a savings in the number of teachers and the number of class rooms required.
>
> Teachers were more satisfied because of less confusion in the frequent shifting of classes and because of less strain in trying to crowd one full lesson into a given length of time.[3]

Superintendent L. H. Brickey of Knox County said that the growth of the school system brought on an increase of laboratory exercises, manual training in the shops, visual instruction, and gymnasium periods in physical education. Forty-five minute periods were too short for such instruction, and it was impossible to give each class a double period as was already being done in the vocational agriculture and home economics departments. The hour schedule was the only solution. All of the Knox County schools changed from the forty-five minute periods to the hour periods at the beginning of the 1935-36 school year.

The state records do not show the number of schools that are using the different schedules. However, it is certain that Knox County only followed a movement that is general over the entire state of Tennessee among the larger schools. The fact that sixty out of the eighty-five instructors replying to the questionnaire on teaching time in vocational agriculture are in

---

3. Martha McMillen, " Economy and the Hour Period." American School Board Journal, February 1934, p. 50.

school with one hour periods would indicate that about seventy percent of the rural high schools of the state are now on the hour period schedule.

A recent study made of curriculum trends in Tennessee showed the following concerning the amount of time given to subjects other than vocational agriculture in 1933 as compared to the time given to the same subjects in 1923.

TABLE I. AVERAGE TEACHING TIME PER CLASS PER SESSION IN TENNESSEE HIGH SCHOOLS[4]

Subject	Teaching Time in Minutes	
	1923	1933
English	6,368	7,909
Mathematics	6,507	7,644
History	6,335	7,128
Foreign Language	7,108	8,050
Formal Science	8,526	9,586

This table shows that more time is given to subjects other than vocational agriculture under the new schedules than under the old forty-five minute schedules. Time available to to vocational agriculture has thus been reduced.

This study discloses that as the schools grew in size more teachers were required, and as the teaching force grew, the broader and more varied the programs of studies became.[5] The more

4. Joe Leon Martin, " Curriculum Trends in Tennessee." pp. 88-105.
5. Ibid., p. 6.

veried the curriculum, the more classes there are to conflict with the vocational agriculture instructors attempt to schedule extra periods of instruction. It is a natural trend of growth, but the growth is more toward a formal education and away from conditions that favor vocational training.

CHAPTER V

ACTUAL TEACHING TIME IN VOCATIONAL AGRICULTURE IN TENNESSEE

Questionnaires were sent to one hundred and ninety-seven vocational agriculture instructors in Tennessee during late June 1939. Eighty-five replies were received.

Of the eighty-five teachers that replied seventy-six were teaching vocational agriculture full time and nine were teaching part-time. The teaching loads of the nine teachers ranged from 4/7 to 7/8 vocational agriculture.

A study of the nine part-time instructors showed the same variations and the same general answers as the full-time instructors, so the part-time and the full time groups were thrown together in the study.

A check up of the schedules of these eighty-five schools showed that sixty of them were on the hour period, twenty-two were on the forty-five minute basis, and three had irregular schedules. The class schedules showed that in all schools with forty-five minute periods there were seven periods each school day. Therefore, it was impossible, in these schools, to teach more than three vocational agriculture classes each day using a double period of ninety minutes for each class. Hence it was necessary in each of these schools to combine two of the four agriculture classes. Each of the twenty-two schools on the forty-five minute period schedule showed that enough time was given to organized classroom instruction to meet the federal

requirement, except for time necessary in changing classes.

The schools that had sixty minute periods all had six periods per day. In these schools there are three devices commonly used to fit vocational agriculture classes into the regular school schedule in such a way as to provide seven hours of organized instruction each week for each class. The first of these is the use of the long and short periods on alternate days. Figure 1 illustrates one use of this device. To make a schedule of this kind it would practically always be necessary for the vocationall agriculture instructor to first make out his schedule, and then have the principal draw up the schedule for the rest of the school around the agricultural schedule. Drawing up this kind of schedule becomes increasingly difficult as the enrollment increases and as the curriculum becomes more varied.

Period	Monday	Tuesday	Wednesday	Thursday	Friday
8:20-8:30	Home room	--	--	--	--
8:33-9:33	Agri. I	Agri. I	Agri. I	Agri. I	Agri. I
9:36-10:36	Agri. I	Agri. II	Agri. I	Agri. II	Org. work
10:39-11:39	Agri. II	Agri. II	Agri. II	Agri. II	Agri. II
11:42-12:07	Lunch	--	--	--	--
12:10-1:10	Agri. III	Agri. III	Agri. III	Agri. III	Agri. III
1:13-2:13	Agri. IV	Agri. III	Agri. IV	Agri. III	Org. work
2:16-3:16	Agri. IV	Agri. IV	Agri. IV	Agri. IV	Agri. IV

Figure 1. Schedule of vocational agriculture classes at Paris High School, 1938-39.

By this type of schedule for vocational agriculture classes Agriculture I has two hours of continuous instruction on Monday and Wednesday. It has one hour of instruction on Tuesday, Thursday and Friday. Each of the other three agriculture classes are arranged so that it may have two long periods each week. The extra hour in these two long periods added to the five regular periods gives the necessary seven hours of organized class instruction each week.

The two extra periods from 9:36 to 10:36 and from 1:13 to 2:13 on Friday, which are marked 'organization work', constitute an ideal provision in a schedule for vocational agriculture. These periods may be used for Future Farmer activities, meetings with the parents of the boys, joint meetings between the F uture Farmers and Home Economics Departments, or other activities which are included in suggested programs for vocational agriculture instructors. However, some of the agriculture students might have other classes at this period and would not be able to attend without special permission. Another disadvantage of the schedule illustrated in Figure I is the heavy teaching burden it places on the instructor. It allows no extra period for preparing lessons, grading papers, or resting. Very few teachers are asked to carry such a teaching burden. This type of schedule is the most frequently suggested by supervisors or directors of vocational agriculture and by

heads of the agricultural education departments. It is suggested because of the manner in which it meets the needs of the vocational agriculture department. The very difficult and often impossible problem of fitting it into the schedule of classes for the entire school is left entirely to the agriculture instructor and the school principal.

A second device is one by which the vocational agriculture instructor provides for the extra instruction during a free class period that is not continuous with the regular class periods. Figure 2 is the class schedule of one of the Tennessee instructors illustrating this device.

Period	Monday	Tuesday	Wednesday	Thursday	Friday
8:15-8:20	Home room	--	--	--	--
8:20-9:20	Agri. I	Agri. I	Agri. I	Agri. I	Agri. I
9:20-10:20	Agri. II	Agri. II	Agri. II	Agri. II	Agri.II
10:20-11:20	Agri. III	Agri.III	Agri. III	Agri. III	Agri.III
11:20-12:20	Agri. IV	Agri. IV	Agri. IV	Agri. IV	Agri.IV
12:20-12:45	Noon	--	--	--	--
12:45-1:15	Activity and Assembly period				
1:15-2:15	Agri. III	Agri. IV	Agri. III	Agri. IV	Future Farmers
2:15-3:15	Agri. II	Agri. I	Agri. II	Agri. I	vacant

Figure 2 Class schedule illustrating devise providing for extra instruction during free class periods that are not continuous with the regular periods.

This is the schedule of school number 12 in the study. It meets every requirement of the Office of Education as to time required for organized instruction in vocational agriculture classes. It also provides for Future Farmer meetings from 1:15 to 2:15 on Friday, and other parts of the instructor's program may be taken care of from 2:15 to 3:15 on Friday. This program probably represents long hours of planning on the part of the vocational agriculture instructor and the principal and it would be acceptable to the authorities. However, it falls far short of being as efficient as the program illustrated in figure 1. The reason is the break between the regular class periods and the periods provided for extra instruction. When the statement is made that 120 minutes are needed for effective work on field trips or shopwork, that means 120 minutes of continuous time. Obviously on field trips you can not return from the trip at the end of one hour and go back again at the beginning of another hour. In the case of shop work such a schedule would necessitate the instructor dismissing one class at the end of an hour allowing them to leave tools and work at the benches or on the shop floor until they come back at the beginning of another hour. No instructor likes to leave a shop in apparent disorder, but to straighten the shop up each day for the intervening periods would constitute a serious waste of time. Furthermore a large number of vocational agriculture departments are at some distance

from the high school building. This is done so that the noise of the farm shop will not interfere with the other classes. The going to and from these classes more than once per day would constitute another serious loss of time. Students would not like it on cold or wet days. It may be logically assumed that this program was drawn up to meet a federal requirement and not to meet the real needs of vocational agriculture. This schedule also calls for continuous teaching throughout the school day except on Friday.

The third possible devise is to combine agricultural classes thus affording extra class periods in which to give the added instruction. This device is illustrated in figure 3.

Period	Monday	Tuesday	Wednesday	Thursday	Friday
8 : 8:45	vacant	Future Farmers	vacant	vacant	vacant
8:45-9:45	Agri. II	Agri. II	Agri. II	Agri. II	Agri. II
9:45-10:45	Agri. III IV	Agri. II	Agri. III IV	Agri. III	vacant
10:45-11:45	Agri. III IV	Agri. III IV	Agri. III IV	Agri. III IV	Agri. III IV
11:45-12:45	noon	--	--	--	--
12:45-1:45	Agri. I	Agri. I	Agri. I	Agri. I	Agri. I
1:45 :2:45	Agri. I	vacant	Agri. I	vacant	Agri. I

Figure 3 Class schedule illustrating the combining of classes to afford extra class periods for giving extra insturction

This is the schedule for vocational agriculture classes of school number 4 of the study. It provides one hour more than is needed each week for Agriculture I, and it has seven vacant

periods each week. The added hours of instruction are continuous. This schedule is ideal except for the disadvantages incident to the combining of Agriculture III and Agriculture IV.

There may be other class combinations such as Agriculture II and Agriculture III or Agriculture I and Agriculture II. The disadvantages of combining classes will be discussed in a later chapter.

This arrangement, however, is only possible in schools with a small enrollment. School number 4 had only forty-four vocational agriculture students. Agriculture III had thirteen students while Agriculture IV had only two. The combination of these two classes gave a class of fifteen members, and would have been a logical move even had it not be necessary to do so to adjust the vocational agriculture schedule to the schedule for the rest of the school. Schools with large enrollments will often find it very difficult and sometimes impossible to make this arrangement.

A few schools with vocational agriculture departments have from seventy to one hundred high school students in their agricultural classes. Instructors in these schools are also called upon to teach vocational agriculture to the eighth grade boys. It would be impossible to work any of the three devices discussed in this chapter into their school schedules without combining classes into large unwieldy groups.

The devices discussed in this chapter make arrangements for organized instruction in the classrooms and during the regular

class periods. It is possible, by other devices, to provide organized instruction outside the regular class periods to classes, groups or individuals. Therefore, these other devices, which will be discussed later, are not necessary to meet the federal time requirement in organized instruction in vocational agriculture in schools with agriculture class schedules similar to those illustrated in figures 1, 2, and 3. It may be noted, however, that only four schools of the sixty with one hour periods that replied to the questionnaire were able to arrange such class schedules.

It is interesting to compare the suggestions for class schedules of early writers on the organization of vocational agriculture departments to the schedules illustrated in this chapter. The ideal of these writers was the vocational half day. Below is a suggestion for such a schedule.

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1	Recitation and discussion on farm jobs				
2	Farm shop work	Lab. work	Farm shop work	Lab. work	Farm shop work
3		Lab. work or project st.		Lab. work or Proje ct s.	
4					
	N O O N				

Figure 6. Suggestions for the vocational half day schedule. [1]

1. G.A.Schmidt, New Methods in Teaching Vocational Agriculture, p.48.

Each period in the above schedule would be forty-five minutes in length. It was suggested that the fourth period be used for supervised study and for project planning. If the instructor had [illegible] sections of vocational agriculture he was to distribute the time in the afternoon in the same way it had been distributed in the forenoon.

By no means was the instructor supposed to follow day in and day out exactly the routine as it is shown in the proposed schedule. The time should be adjusted entirely to suit the work under consideration. This might call for one or two consecutive field trips which might require the full half day. The classroom discussion on many days might run two periods. During some seasons of the year it would only be necessary to hold shopwork only once or twice per week. The instructor should have the greatest possible latitude in adjusting the available time to the best possible needs.

Undoubtedly this arrangement is ideal from the standpoint of efficiency in teaching vocational agriculture. It allows for an abundance of time for field trips, shop work, and laboratory exercises. It is flexible to the point of allowing the agriculture instructor to change his entire routine for the half day without interfering in the least with the other classes in the school. The highest purposes ever conceived for vocational agriculture could be realized by using such schedules. It would be beyond the powers of nearly all instructors to make such an arrangement at present.

In the first place there are very few rural schools today that have only two classes or sections of vocational agriculture. Four of the eighty-five schools replying to the questionnaires of this study were teaching one class of vocational agriculture, six were teaching two classes, thirty-four were teaching three classes, thirty-six were teaching four classes, and five were teaching five classes. Nine of the teachers in the one, two, and three vocational agriculture class groups were part-time teachers and were teaching classes in other subjects. Most of the teachers with only one or two classes in vocational agriculture are carrying extra heavy loads in day-unit, evening school, or part-time work. The two section plan would be adaptable to less than ten of the eighty-five schools reporting because of the number of classes or sections in vocational agriculture.

In the second place enrollment in the vocational agriculture departments are now too large to be fitted into such an arrangement. The average size for all departments in this study was slightly more than fifty-four, and the range was from fourteen students in the smallest department to one hundred and fourteen students in the largest department. It would be possible, from the standpoint of enrollment, to fit the half day program to the smaller departments, but it would be expensive, difficult, and very often impossible to arrange extended field trips for the large groups in the larger schools.

In the third place the present schedules of classes in

our rural high schools could not possibly be fitted to such arrangements. About seventy percent of all these schools now have the hour period class schedules, with six periods per day. Four of these periods are in the forenoon and two of them are in the afternoon. The school day is not divided in half. In schools with the forty-five minute periods there are seven periods per day, four being in the forenoon and three being in the afternoon. This is a more balanced day than in the schools on the hour period schedules, but the school day here is not divided into two eq ual parts. If agricultural departments should be divided into two sections in the present day rural school, the two agricultural sections would not be allotted equal time for instruction in vocational agriculture. What is perhaps more important each would not have an equal amount of time left to give to other subjects needed for graduation credits. It must be remembered that the present requirement for graduation in the rural high schools is sixteen units, and only four of these may be given for vocational agriculture.

It is admitted today that the vocational half day is an impossibility, and that only a few schools can give as much as ninety minutes per day for vocational classes. The foregoing paragraphs bring to mind how much our schools are drifting towards programs favorable to formal education and unfavorable to vocational education. The requirements for college entrance, the requirements for high school graduation, and the class

schedule all tend strongly in that direction and vocational agriculture is continually being forced to make adjustments to the changing situations. Old plans and methods must be given up while new plans and methods must be adopted.

CHAPTER VI

PERCENT OF STUDENTS NOW GETTING SEVEN HOURS OF INSTRUCTION EACH WEEK

To determine the actual accomplishment of the vocational agricultural instructors of Tennessee in meeting the time requirement of the Office of Education, is one of the most important parts of this study. It is an inescapable fact that there are often serious difficulties in meeting it in a large number of our high schools. Sometimes in schools on the clock hour basis it is impossible to give the full seven hours of instruction required each week. It would be far better to face the situation as it is and make fair and practical adjustments than to go ahead pretending that the program is being carried out exactly as the Office of Education intended that it should be carried out. This does not mean that the instructors should fulfill the requirement or forfeit part of their pay. Perhaps a great deal of the adjusting should be done in the Office of Education. The most effective solution would be one that came from open and honest conferences between representatives from the Office of Education, from the Departments of Agricultural Education, from the State Supervisors and Directors, and from the teachers themselves.

It would be impossible to get absolutely accurate figures on the degree of accomplishment of the instructors in living up

to the federal time requirement. There are two reasons for this.

The first of these reasons is that the teachers do not keep records of the hours of organized instruction given to students of vocational agriculture outside of regular class hours. As it has already been stated, only the twenty-two schools with forty-five minute periods, and four of the schools with sixty minute periods show this time requirement taken care of in regular class hours. Fifty-six schools could not meet the requirement in this way. Instructors are not required to keep records of extra hours of instruction. They are required to indicate how they expect to fulfill the requirement when they turn in their annual reports of their programs of work at the beginning of the school year. Schools with extra heavy schedules may sometimes show only one free class period each day for giving two extra hours of instruction to each of five agricultural classes each week. This is obviously impossible. However, the instructor may indicate that the time will be made up outside the regular class hours and his report will be accepted.

This is an unfair situation to the teacher who is required to make the report, and to the supervisor who is required to show that all these programs live up to federal regulations. The greatest difficulties are pressed upon those instructors who are carrying the greatest teaching loads and

perhaps often upon those who are well up in the front ranks of teachers promoting the vocational agricultural program as a whole.

The second reason for not being able to get absolutely accurate figures on the degree of accomplishment is that there is only a vague conception as to what is meant by organized instruction among instructors of vocational agriculture. Nowhere can a definition or clarification of this term be found. It can be interpreted to refer only to that instruction given to the regular vocational agricultural classes during the regular class periods; it can be interpreted to mean that agricultural instruction given to classes, groups, or individuals on field trips, stock judging trips, project tours, and other out of class instruction given by the instructor; it can be interpreted to apply to the time given by the student in working on special assignments given by the instructor, the actual work being done when the instructor is not present; or it can be stretched to cover the character and citizenship training given in Future Farmer programs. Certainly there is a lot of stress laid on character and citizenship training in drawing up the state programs for vocational agriculture at the state teacher's conferences, and instructors are justified in getting an impression that such training is regarded officially as a part of their training program. It adds much to the time and work that is required of them.

The Ohio State Questionnaire[1] and the North Carolina Study[2] both concerning this same subject interpreted 960 clock hours for a four year course as being a proper fulfillment of the requirement. This would lead one to believe that group and individual instruction on the home projects during the summer months were perhaps to be accepted by the officials in those states as time given to organized instruction in vocational agriculture.

I believe that the figures given by the instructors on their returned questionnaires in a large number of cases represents the estimated percent of accomplishment rather than the percent of all students that received seven hours of organized instruction each week. If there were forty students in a vocational agriculture department and each was supposed to receive two hours of organized instructions for each of thirty-six weeks of the school year, then the entire department would have to be given 40 x 72 = 2880 extra hours of instruction for the entire department of forty students. If no students in the department received the full seventy-two extra hours but all the students received 1440 total hours, then the percent of students receiving the required amount of organized instruction would be zero, but the degree of accomplishment of the entire department would be fifty percent.

1. Distribution and Amount of Time in Teaching Vocational Agriculture. Questionnaire, Ohio State University, Department of Agricultural Education.

2. Distribution and Amount of Time in Teaching Vocational Agriculture, Study #9, N. C. State College of Agriculture.

In making this study a questionnaire was filled in for the vocational agricultural department at Powell High School. It was estimated that fifty percent of the students of that school were given the required instruction during 1938-1939. In 1939-1940 accurate records were kept for each student on the organized instruction he received above the five hours given each week in his regular class periods. Only 16.1% of all the students received the full seventy-two hours required for the year. A total of fifty-six students, however, received 2225 extra hours out of a total of 4032 required. The percent of students receiving the full number of extra hours required was only 16.1% but the degree of accomplishment for the entire department was about fifty-five percent. This was due to the large number of students that made up part of the time without making up all of it.

The study for the state of the percent of students receiving seven hours of organized instruction each week was made by first dividing the schools into three groups according to the length of time in the class period.

Nineteen of the twenty-two schools on the forty-five minute period basis reported 100% of their students were getting the required number of hours of organized instruction. One of the other schools in this group reported 98% and another reported 99%. The other school reported that none of the students

actually received the total number of hours of instruction required, but that all received nearly the full amount. The instructor explained that this was because each student in the department had been absent one or more days during the year. We are justified in assuming that this group fully meets the federal requirement for teaching time.

The three schools on the irregular schedules also showed 100% of their students receiving seven hours of organized instruction each week.

The sixty schools that were on the one hour period basis were the ones that were expected to have the most difficulty in meeting the federal time requirement. Table II shows that such was actually the case. The instructors were requested to estimate the percent of their students who received the full seven hours of instruction each week. They were placed in percentage groups according to their answers. Those estimating 100% were placed in the first group, those estimating from 90% to 99% in the second group, and so on down the column.

TABLE II. PERCENT GROUPS OF SCHOOLS CLASSIFIED ACCORDING TO PERCENT OF STUDENTS RECEIVING SEVEN HOURS OF INSTRUCTION EACH WEEK

Percent group	Number of schools in group	Percent of total number of departments
100%	10	16 2/3%
90-99	9	15
70-89	9	15
50-69	10	16 2/3
30-49	7	11 2/3
5-29	5	8 1/3
.00	8	13 1/3
Schools not giving percent	2	3 1/3
Total	60	100

The median percent of students receiving seven hours of organized instruction was about 61%.

It is evident that the above table does not take account of those students who received part but not all of the seventy-two hours of added instruction. As instructors had not kept a record of this time, it would have been impossible to have gotten such figures for the entire state.

In order to have at least one record for these students with partial fulfillment a complete record of the added hours

of organized instruction given to each agricultural student for the school year 1939-1940 was kept at Powell High School. The results, as has already been given in this chapter, was a fifty-five percent accomplishment of the total requirement for hours of instruction in addition to the regular scheduled five hours each week.

There were many factors that made it inadvisable to require that every student in the department make up all of the seventy-two hours. The factors will be discussed in one of the following chapters. The making up of this added time was voluntary on the part of the students. This was the most important reason why the students were not uniform in the degree to which they made it up. Table III shows their variation in this respect.

TABLE III. PERCENT OF STUDENTS BY GROUPS FULFILLING THE TIME REQUIREMENT POWELL HIGH SCHOOL 1939-1940

Percent Fulfillment	Number of students in group	Percent of total enrollment
25% or less (18 or less hours)	11	19.8
26% to 50% (19 to 36 hours)	16	28.4
51% to 75% (37 to 54 hours)	14	25
76% to 99% (54 to 71 hours)	6	10.7
100% (72 or more hours)	9	16.1

In reviewing the above record of one vocational agricultural instructor's attempt to live up to a requirement, the fulfillment of which was one provision on which his salary was paid, the results cannot be said to be satisfactory. The fault, however, was certainly more that of the present unsatisfactory situation than it was of the instructor who did all he could to live up to his contract.

CHAPTER VII

EFFECT OF TEACHING LOAD ON TEACHING TIME

The teaching load of the vocational agricultural instructor would logically effect the teaching time that he would be able to give to his students outside the regular classroom periods. This teaching load would be divided into two natural parts. One part would include the load that the instructor carries outside the school day given to organized instruction of his all day students. The other part would include his daily teaching load in the all day classes. The evening school, part-time and day-unit class would belong to the first part. The total enrollment of the all day classes and the Future Farmer program would belong to the second part.

The instructor would have activities other than those listed above. Community service activities, for instance would be included in his out of school load. The size and scope of the supervised farm programs in his all day group would be a very important part of his teaching load in the second part. However, there is no way of determining accurately the extent of such activities without long and complicated studies from the individual monthly reports of each instructor. It can be reasonably assumed, however, that the instructor with the largest and most active evening school, part-time, and day-unit classes is also carrying on a larger program of community service among

the members of this group. It is also reasonable to suppose that those teachers with the largest enrollment in their all day classes have the heaviest load of farm practice supervision for this group.

In considering the teaching load of the instructor carried outside his regular all day classes the simplest way to make the comparisons is to work out a factor that will represent accurately the total teaching load for this group. The records in the Division of Vocational Education at Nashville gave the number of evening school and part-time classes held and the total enrollment for these classes. They did not give the average attendance records. No records were available on the day-unit classes. By combining the evening school and part-time total enrollments for all the schools in each percentage group and dividing by the number of schools in that group the average enrollment for each school in the group was arrived at. In a like manner by dividing the total number of evening school and part-time class meetings held by each percentage group by the number of schools in that group, the average number of meetings held by each school was arrived at. Then by multiplying the average number of meetings held by each percentage group by the average enrollment for that group, a group factor was arrived at that could be compared to the group factors for the other percentage groups and indicate the relative size of the out of school teaching loads of each percentage group as accurately as could be arrived at with the figures available. The meaning of the

term percentage group has been explained in the preceding chapter.

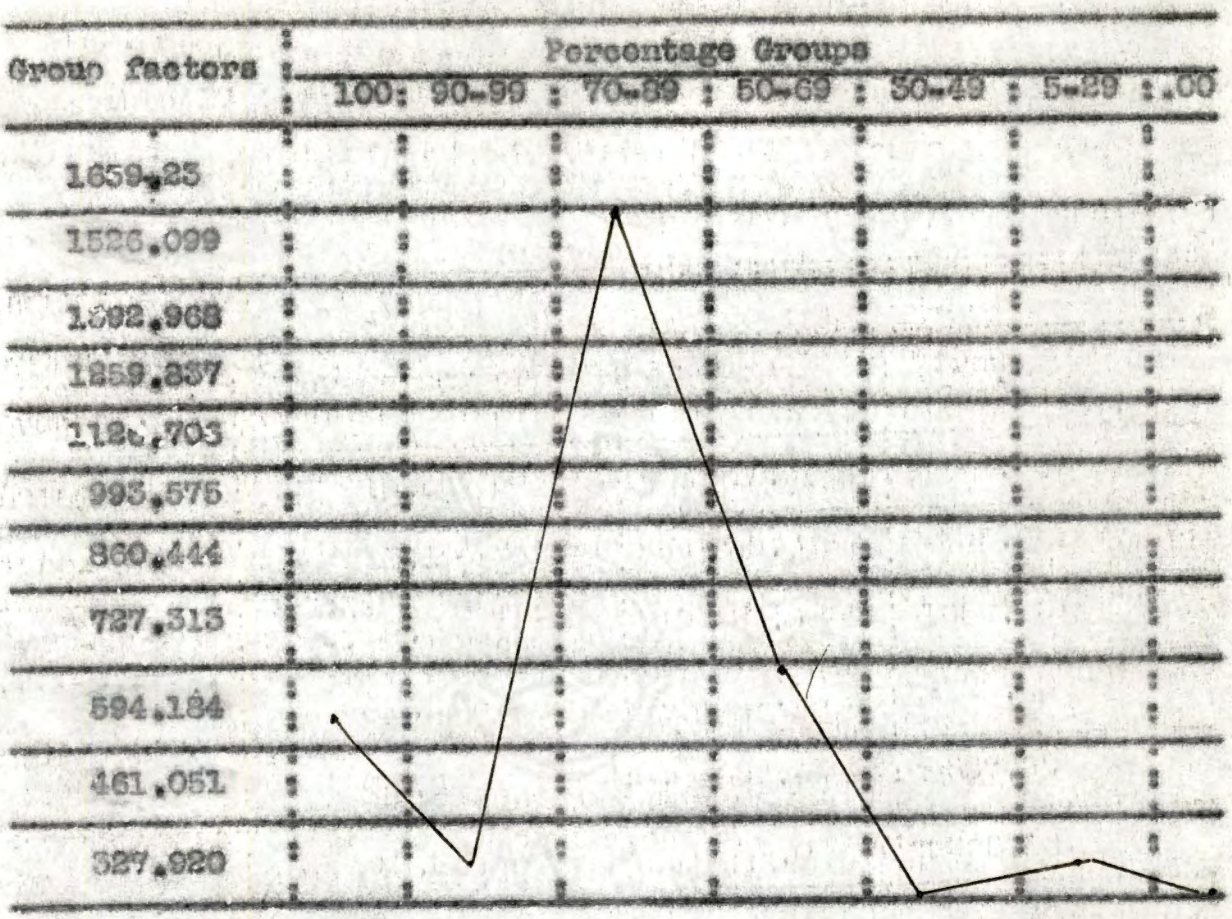
Table IV gives the results of this comparison.

TABLE IV. GROUP FACTORS INDICATING AVERAGE OUT-OF-SCHOOL TEACHING LOADS OF DIFFERENT PERCENTAGE GROUPS

Percentage Groups	Average number of meetings held	Average Enrollment	Group factor
100%	18.4	41.9	770.96
90-99	11.1	35.6	395.6
70-89	27.7	59.9	1659.23
50-69	14.5	50.0	725.00
30-49	12.8	26.4	327.92
5-29	13.0	33.0	395.16
00	24.0	14.2	340.8

The twenty-two schools with forty-five minute periods and the schools with irregular periods are not included in this table because their school schedules allowed them to meet all time requirements for organized instruction during their regular class periods.

The following graph will indicate to what extent the out of school teaching load of the instructor effects the degree to which he fulfills the federal requirement for organized teaching time.



Graph 1. Correlation between out of school teaching loads and degree of fulfillment of federal requirement.

This graph would indicate that there is no correlation between the out of school teaching load and the degree of fulfillment of the federal time requirement. Those instructors who fulfill entirely the federal requirement have a comparatively light out of school teaching load, while those in the 90-99 percent group drop far below the average. The 70-89 percentage group has much the heaviest out of school teaching load, while

the 50-69 group comes next. Those schools with the lightest out of school teaching loads also did the least towards meeting the federal requirements.

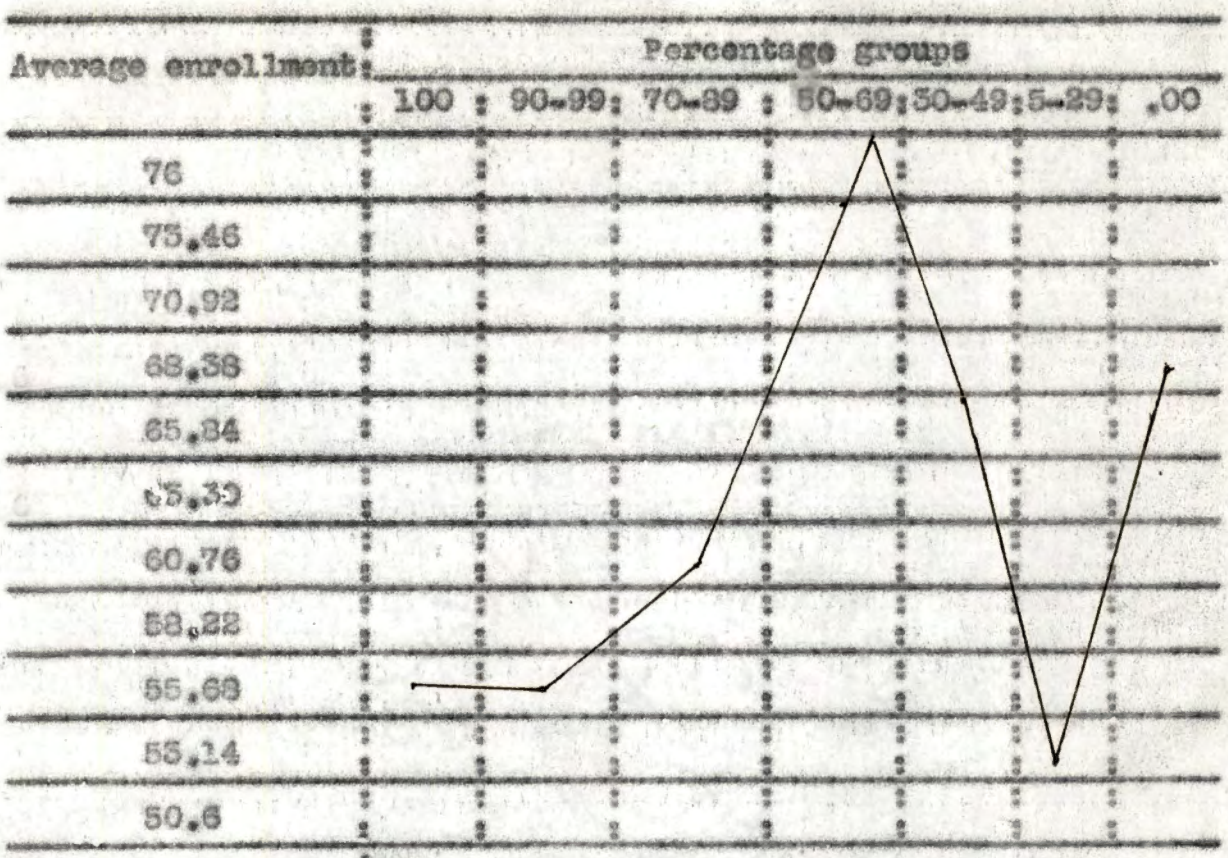
This graph indicates that those instructors with very heavy out-of-school teaching loads are only able to give from 50 to 90 percent of their students the full number of extra hours of instruction required by the Office of Education. Otherwise there is no correlation between out-of-school teaching load and the degree of fulfillment of the federal requirement.

The instructors teaching load in his all day classes is indicated in this study simply by the size of his vocational agricultural department. The number of classes that he taught would be a lesser factor because, regardless of the division of his department into classes he would still have the same number of students to teach, the same number of papers to grade, the same number of supervised farm programs to look after, and the same number of students to have other classes that would conflict with periods scheduled for making up the required hours of organized instruction outside the regular class periods. On this basis the relative sizes of the teaching loads of the different percentage groups is given in Table V.

TABLE V. AVERAGE ENROLLMENT OF ALL DAY STUDENTS IN PERCENTAGE GROUPS

Percentage group	Number of schools	Average enrollment
100%	10	56.9
90-99	9	56.3
70-89	9	61.3
50-69	10	76.0
30-49	7	68.0
5-29	5	54.2
.00	8	69.4
Not given	2	50.6

In order to see more clearly the correlation between the enrollment of the all day classes and the degree of fulfillment of the federal time requirement, the figures in Table V are presented in graph form.



Graph 2, Correlation between teaching load in the all day classes and the degree of fulfillment of federal time requirement.

Here again the teaching load of the middle percentage groups is the heaviest.

It must be admitted the figures concerning the out of school teaching load and the teaching load in the all day classes do not prove that the instructors' teaching loads have any substantial effect upon the degree to which he fulfills the federal time requirement. Other factors that are not included in these tables may tend to explain these figures. For instance, the instructor with a small all-day enrollment and a light out-of-school teaching load may be giving far more time to supervision of his all day farm programs. There is no way, however, by which

the records of supervision of farm programs may be gotten without the checking of the individual monthly reports of each instructor.

CHAPTER VIII

PREFERENCE OF TEACHERS FOR TEACHING TIME

Teaching time will vary according to teaching procedures and teaching methods. There are four procedures most commonly used by instructors of vocational agriculture. They are field trips, shopwork, laboratory exercises, and classroom exercises. The questionnaire sent to the instructors listed these four procedures. The instructors were requested to check the minimum length of a period sufficient to use each procedure effectively and to put down the approximate number of times the procedure would be used each year by each department. Blank lines were provided on which the instructors were requested to put down other procedures not included in the list of four names. Film strips, farm study, supervised study, magazine study, and farm record study were other procedures named by the instructors. By farm study is meant having the students make studies of farms or farm practices in the community, then bring their findings to class for discussion with the entire class group. Since not more than two instructors named any one of this list and since a large number probably use each procedure, it was believed that these procedures were included by the majority of the instructors as part of their classroom exercises. All of these procedures, therefore, were included as part of the classroom exercises.

Ten questionnaires were returned with procedures used by instructors checked and minimum length of time sufficient for effective use given. These ten did not give the number of times each procedure was used each year.

The answers of all the instructors who returned questionnaires including the twenty-two schools with forty-five minute periods, the three with irregular class schedules, and the sixty schools with one hour class periods were tabulated and summarized in this study.

The number of teachers using each procedure were counted. The total number of times it was used in all of the eighty-five schools was put in the second column of Table VI. In order to discover how important a part each procedure was of the entire teaching program the percent that the times each procedure was used was of the total for all procedures used was calculated.

TABLE VI. EXTENT OF USE OF TEACHING PROCEDURES IN VOCATIONAL AGRICULTURE

Teaching procedures	Number of schools using	Number of times used in all schools	Percent of total for all procedures
Field trips	70	3811	8.4
Shopwork	82	7220	16.
Laboratory	70	3055	6.7
Classroom exercises	85	31065	68.9
Totals	85	45151	100

This table indicates that the bulk of the teaching done in the vocational agriculture departments in the eighty-five schools whose instructors replied to the questionnaire is done by classroom exercises. There are improved methods being used in classroom exercises, but they are methods used in classes that are not vocational. Visual education and supervised study, for instance, are common to formal subjects.

It is likely that the relatively small number of times that field trips and shop exercises are used is due to the teaching situation, and not to the preference of the instructor.

Table VII gives the summary of the preferences of the instructors as the minimum time to be used with each procedure for effective teaching.

TABLE VII. PREFERENCE OF INSTRUCTORS FOR TEACHING TIME IN DIFFERENT PROCEDURES

Teaching Procedures	Preferences for minimum time in minutes: Number instructors recommending				
	30	45	60	90	120
Field trips	0	1	23	27	18
Shopwork	0	0	40	23	19
Laboratory	1	3	45	18	2
Classrooms	0	0	74	11	0
Totals	1	4	182	79	39

For instructors who checked the sixty minute period for field trips and shopwork added that their preference was made under the present situation. They wrote that under a more favorable situation they would prefer longer periods.

The table shows that a majority of the instructors prefer 90 or 120 minute periods for field trips and shopwork. For all procedures the 60 minute period is by far the most popular. Two instructors expressed strong preference for a universal 60 minute period and one of the two is teaching in a school with 45 minute periods and is using the 90 minute double period for his classes in vocational agriculture.

The preferences as to teaching time expressed by the

different instructors are probably influences to a very great extent by the length of the class periods that they are accustomed to. Perhaps there is also a feeling that it is vain to hope for longer periods for vocational agriculture as long as the set up in the rural school system does not make provisions for those periods. There may be a feeling among the instructors that since there seems little hope for adjusting the schools to the needs of vocational agriculture, it would be wise to adjust vocational agriculture to the schools.

CHAPTER IX

FACTORS EFFECTING AMOUNT AND DISTRIBUTION OF TEACHING TIME

A number of factors that might effect the amount and distribution of time in the teaching of vocational agriculture was listed on the questionnaire. The instructors were asked to check those which applied to their own schools. The list included the following factors.

1. Size of vocational agriculture classes (all day).
2. Teaching burden including evening school, part-time day-unit, and future farmer activities.
3. Lack of cooperation of county superintendent.
4. Lack of cooperation of school principal.
5. Lack of cooperation of other teachers.
6. Inability to make schedule of agricultural classes with lengthened periods conform to schedule of other high school classes.

Instructors were requested to list other factors on blank lines provided for that purpose.

A tabulation of the answers is shown in Table VIII.

TABLE VIII. FACTORS EFFECTING TIME DISTRICUTION IN VOCATIONAL AGRICULTURE

Factors	Number of teachers checking
1. Size of agriculture all day classes	38
2. Teaching burden	43
3. Lack of cooperation of county superintendent	2
4. Lack of cooperation of principal	8
5. Lack of cooperation of other teachers	9
6. Inability to conform schedule with other classes	46
7. Transportation	1
8. Duties as coach or principal	1
9. Community service	1
10. Lack of teaching equipment	1
11. Extra curricula activities	1

Here we see that in the minds of the instructors the most important factors that effect the amount and distribution of teaching time in vocational agriculture are in order of importance.

1. Inability to conform schedule with other school classes.
2. Teaching burden.
3. Size of all day agriculture classes.
4. Lack of cooperation of other teachers.
5. Lack of cooperation of principal.

These figures were taken from the replies of all eighty-

five instructors returning questionnaires.

More than half of the instructors have trouble making their schedule conform to the schedule of the other classes in the high school when they attempt to schedule more than the time allotted to regular class schedules. The actual schedules of the agriculture classes over the entire state would indicate that in the big majority of cases this factor has made such an arrangement impossible.

We see that in the opinion of a large number of instructors the out of school teaching burden is definitely an important factor. Twenty-two of the eighty-five instructors had an enrollment in their evening school and part-time classes of sixty or more. Of this twenty-two, fourteen checked the teachers burden as a factor and eight did not check it. This is about ten percent higher than the average number of instructors checking for the entire group.

A little less than half of the instructors checked the size of the all day agriculture classes as being a factor. However, seventeen out of twenty-one with an all day enrollment of seventy or more students checked this factor. This means that 81 percent of the instructors with large all day enrollments checked this factor as compared to 44 percent for the entire group. Here there is a definite correlation between the instructors selection of the size of the all-day classes as a factor effecting time given to instruction of vocational agriculture classes and the all day enrollments of those in-

structors.

The table indicates that in these eighty-five rural schools there is comparatively little feeling on the part of agricultural instructors that county superintendents, principals, and other teachers fail to cooperate in helping the agriculture instructor set up his own schedule. Probably the lack of cooperation here is no greater than it would be between the school officials and teachers of non-vocational subjects. If this study could be accepted as an accurate indication of the situation, the county superintendent would be more cooperative than the principal and other teachers. Since a large number of superintendents have made much more of a study of vocational agriculture than have principals and other teachers, and since a number of them have held conferences with vocational agricultural and state officials at the Future Farmer summer camp, it is likely that the figures in this study indicate a situation that actually exists concerning the county superintendents. It is possible that this whole problem could be better solved if this type of conference were made one of the steps towards solution.

CHAPTER X

DEVICES USED BY INSTRUCTORS TO PROVIDE SEVEN HOURS TEACHING EACH WEEK

It is apparent that seven hours of organized instruction each week can not be arranged in schools with one hour class periods without making special adjustments. A regular one hour period each day for the five weekly school days would fall two hours short of the required time. The vocational agriculture instructors are, therefore, forced to find devices by which this requirement may be met. Four devices that are readily suggested are:

1. Combining agricultural classes.
2. Use free period for instruction.
3. Use long and short period on alternating days.
4. Individual assignments (home or out of school).

These four devices were listed on the questionnaire with the request that the instructors check those devices that they made use of. Space was provided in which the instructors were requested to write down devices they used that were not listed. A summary of the answers to this request are given in Table IX.

TABLE IX. DEVICES USED BY INSTRUCTORS TO PROVIDE SEVEN HOURS OF INSTRUCTION EACH WEEK

Devices	Number of teachers using
1. Combining classes	44
2. Use of free period for instruction	58
3. Use of long and short period on alternate days	12
4. Individual out of school assignments	55
5. Future Farmer programs	2
6. Supervised study	3
7. Holding all day classes in out-of-school hours	4
8. Holding all day classes on Saturdays	2
9. Holding all day class at night	1
10. Dividing classes so as to have small groups for field trips and shop work	1

Three of the above devices are important from the standpoint of number of teachers using. They are in order:

1. Use of free period for instruction.
2. Individual out of school assignments.
3. Combining classes.

The use of long and short period on alternating is important because it is the device suggested by most high

officials and educators in the Department of Vocational Education. When it can be worked into the school schedule it is undoubtedly the most ideal and satisfactory device of all. This device has already been illustrated in Chapter VII. It is significant that in spite of its being so frequently suggested and of its unquestionable worth where possible, only twelve instructors made use of this device, and only one schedule worked in perfectly with the other classes in the high school.

The device most frequently used of all was the use of free period for instruction. The successful use of this device would depend on:

1. The number of free periods available.
2. The number of students that report for instruction during these periods.
3. The uniformity of the group as to grades and courses scheduled.
4. The type of instruction given.

Those instructors who are teaching five classes of vocational agriculture each day would only have one free period each day in which to give extra instruction to all four high school grades. It would be impossible to give efficient instruction or training under this condition even should it be possible to have a period that did not conflict with any of the four high school classes. Such a conflict would be inevitable, however, unless all the rest of the student body except those in the home economics department were scheduled to be in the study hall.

On the other hand, those instructors who teach only two vocational agriculture classes each day, and who teach no other classes would have four extra periods for giving added instruction to only two classes.

In using the free period for added instruction it often happens that but few students do not have classes during one of the free periods while many students do not have classes during another period. When too large a number of students report it will be difficult for the instructor to give effective instruction. If only one or two report the instructor makes little headway in making up extra teaching hours.

If the group reporting is uniform as to grade and course of study it is possible to give uniform group assignments and hold uniform recitations or exercises. However, if the group ranges from the first year through the fourth year agriculture class with a wide variety of courses of study, then the instructor is reduced to individual instruction, giving assignments or conducting supervised study periods. This is likely to lead to ineffective teaching.

The value of this instruction given during the free periods will depend much on the type of instruction given. In the vocational agriculture department at Powell Station High School there is an eighth grade agriculture class in addition to the four high school classes. This leaves only the one period each day free. Added instruction has been given during this period to students that had no conflicts with other classes. On some days when such exercises as group discussions of project plans, pro-

ject records, or group demonstrations, were held the time was well spent. On other days when individual assignments have been made including refiling of bulletins, restacking of magazines, rearranging the steel filing case, and other similar tasks, the time was not so well spent. There is no regular janitor for this department and sometimes students are credited with extra hours of organized instruction for cleaning up the agriculture building, sweeping out the shop, or washing windows.

It must be remembered that this extra period is given to other teachers for grading papers, preparing lesson plans, or for resting. To make it necessary for the agriculture instructor to teach during this period is to place an extra teaching burden upon him, in the instances where it gives him six full hours of continuous teaching each day, that is seldom asked of a teacher.

There are many factors that tend to lower teaching efficiency during the extra period. It is a device that has doubtful value in serving the purposes of vocational agriculture. Perhaps its principal use is as a device to meet the federal time requirement.

The device used the second largest number of times by the instructors was the individual out-of-school assignment. An instructor using this device may wonder how he may justify himself in calling this 'organized instruction'. He makes the assignment, he checks the work after it is finished, but the great

bulk of the time counted is taken up by the student in performing the task. Yet perhaps in nearly all cases the entire time is counted. When a teacher of mathematics assigns problems for homework, he does not count the time that the student works on these problems outside the class as part of his teaching time. However, the agricultural instructor is faced with a special situation. When the student is told at the beginning of the year that the course requires seven hours of organized instruction each week instead of the usual five, this requirement is thought of as it effects himself and not as it effects the teacher or the department. If he works two hours on an assignment at home he expects to be given two hours credit. Very few assignments would be completed if only the minutes of his conference with the teachers were credited to his time.

Giving individual out-of-school assignments can be of value. It is an effective way to form the habit of reading farm magazines. Articles can be assigned for reading and reporting upon. Soil erosion, rural electrification, wild life, and numerous other such subjects can be handled in like manner. Farm shopwork performed in the home shop or the school shop can be assigned. Work in the community booth at the fair, with the Future Farmer exhibits, with community clean-up campaigns, with beautification of school grounds and other tasks that tends to make the student more civic minded may be counted. The instructor is justified in feeling that counting all time given to worthwhile

out-of-class assignments violates only the technical meaning and not the spirit of the time requirement ruling.

A part of the policy for vocational agriculture education apparently is adopted by the higher ups without much thought of the harassing arrangements it forces the individual agricultural instructor to make or to the confusion it cometimes brings about in the rest of the school.

The following paragraphs represent accurately what happened at one school that tried out a regular program out-of-class individual assignments. The same thing would likely happen to any school with the same situation that tried such a program.

This school had a large enrollment in the vocational agriculture department, and also had an eighth grade agriculture class. The instructor had only one free hour during the day. The only possible way of giving students seven hours of organized instruction each week was by making out-of-class assignments. The vocational agriculture instructor talked the matter over with his principal and together they made elaborate plans for enabling agriculture students to perform these tasks during school hours. It was agreed that agriculture students would be allowed to go to the vocational agriculture department during their study hall hours for special assignments. A standard form was made giving the name of the student, the time and date he desired to work at his assignment, the nature of the assignment, and a statement that he was making a passing grade in all his other classes. Space was provided for the signatures of the vocational agriculture

instructor, the study hall teacher, and the principal. Both the study hall teacher and the vocational agriculture instructor were to keep a roll of all students so occupied.

Here are some of the results of the plan. The agriculture instructor was forced to give about fifteen minutes of each regular class period giving assignements and checking the attendance of those students; their presence in the agriculture classroom often interfered with the good order and recitations of the regular classes; those students carrying out special assignments in the shop did not always do acceptable work while their instructor was occupied in teaching another class. As the school year went on some of the students that were not under the direct supervision of the instructor fell into the habit of slipping out and going to a nearby store. This later proved very embarrassing to both the vocational agriculture instructor and to the principal. It certainly did not add to the good name of the school.

The combination of classes always affords another free period for the instructor. However, it results in a larger number of students from different grades in each class, and for this reason it is often hard to schedule an extra hour for class instruction that will not conflict with other classes of some of the students. In addition combining classes in vocational agriculture always forces the instructor to a shifting of subject

matter for the different grades in order to avoid repeating. The following course illustrates such an arrangement:

Agriculture III and IV 1938-1939

Dairy (managerial).

Computing rations for farm animals.

Cropping systems

Soil conservation and soil building.

Agriculture II 1938-1939

Dairy (cattle diseases and other care).

Horses and mules.

Alfalfa.

Small grains.

Beginning the year 1939-1940 the course for Agriculture II above will have to be given to Agriculture III and IV while that given to Agriculture III and IV will have to be given to Agriculture II. This shift will have to be made each year.

It can be readily seen that the Agriculture III and IV course for 1938-1939 is managerial in character and an advance over the other course. Thus a combination of classes has the disadvantage of breaking up the continuity of subject matter.

Holding vocational agriculture classes at any time outside the regular school hours constitutes a heavy burden and is likely to meet with serious objections from the students. Transportation is likely to become a factor that will make it impossible in nearly all schools. Few schools can use this device, and only seven of the eighty-five schools in this study reported the device. It

is significant in that it emphasizes the desires of the instructors to fulfill all obligations and the extremes to which they will go in order to fulfill them.

In Chapter VIII it was stated that there are many reasons that make it inadvisable to make an iron clad provision that all this extra instruction must be required of each student before he be given credit for the work. The first of these is the frequent impossibility of meeting the requirement. It is obviously unfair to require seventy-two added hours of instruction when there is no possible way for the student to arrange his schedule so he can take this instruction. The second reason is the heavy requirement of the student of vocational agriculture outside of the added time in organized instruction. He is required to attend class during the regular scheduled class periods for the same length of time that he attends other classes for which he receives equal graduation or college entrance credits. Regardless of what we in vocational agriculture think of graduation and college entrance credits, in the eyes of the school officials, principals, and other teachers, in the eyes of the parents, and in the eyes of the student body they are important and are becoming increasingly important. They are definitely a yardstick in measuring values of courses in rural high schools. In addition to the time that a vocational agriculture student spends in his class recitations, he is expected to spend an equal amount

of time at work on his supervised farming program. His activities in the Future Farmer Chapter and in other vocational agricultural programs also take time. Those outside the department often think that the students in vocational agriculture pay a high price for the credits that he receives. The third reason is the all too frequent confusion that irregular devices for making up the extra teaching time causes. An illustration of this confusion has already been given in this chapter in the case of those students making up time in the vocational agriculture building and the farm shop while the instructor is occupied teaching his regular classes. Taking account of these factors the instructor in a large number of cases will deem it wise to make the fulfillment of the time requirement voluntary on the part of the students.

Inevitably this will result in unequal fulfillment on the part of the students. A table illustrating this is given in Chapter VIII.

A record was kept in the vocational agriculture department of one high school of the different ways by which the agriculture students made up their extra time during the year 1939-1940. At the end of the year this record read as follows:

Kind of work	Students participating
I. Individual assignments	
1. Shopwork	20
2. Making agriculture surveys	1
3. Helping in field demonstrations	5

Kind of work	Students participating
4. Field selection of seed corn	3
5. Compiling community farm statistics	6
6. Cleaning and care of shop and tools	5
7. Reading agricultural articles and making reports	18
8. Soil testing with soil test kit	8
II. Future Farmer activities	
1. Attendance at night meetings	44
2. Attendance of Father and Son banquet	31
3. Attendance of State Convention	52
4. Work at Tennessee Valley Fair	12
5. Oratorical contest	5
6. Stock and dairy cattle judging	16
7. Soliciting evening school members	15
8. Preparing district chapter field day	7
9. Attendance of home economics and Future Farmer joint party	34
10. Future Farmer basketball	14
11. Distributing Christmas baskets	4
12. Beautifying school grounds	5
III. Study of supervised farm program	56
IV. Work done in cooperation with English department	2
V. Supervision of farm programs	56

Kind of work (continued)	Students participating
VI. Attendance of Dairy Short Course	14
VII. Attendance of evening school	5

The justification of including many of the activities of the Future Farmers as part of the organized instruction may be questioned on the ground that it cannot be considered organized instruction. The justification for this is that these activities are included in the State Program of Work for Vocational Agriculture. We find the following goal for vocational agricultural instructors in the 1937-1938 program.

1. Train boys to assume their responsibilities in social, civic and economic life of the community.[1]

We find also that the national leaders of vocational agriculture strongly recommend the establishment of Future Farmer Chapters in all departments to train agriculture students in leadership and citizenship. They also call for a national program that will make the Future Farmers better known to the farmers, to educational authorities, and to the public as a whole.[2]

The instructor of vocational agriculture has a heavy load added to his regular organized class instruction by his responsibility for the programs of directed activities in the Future Farmer Chapters. His responsibility for these activities, and their importance in the well rounded development of the student of vocational agriculture are constantly being impressed upon

1. Program of Work for Tennessee Teachers of Vocational Agriculture for 1937-1938, p. 6.

2. Program of Studies, U. S. Office of Education, Monograph No.19, p. IFF 10.

instructors in conferences and discussions at the teachers' summer camps. It is not treated as a sideline, but as a vital part of the regular program of work for each department.

CHAPTER XI

THE SITUATION IN NEIGHBORING STATES

A letter was sent to the head of the Department of Agricultural Education of each state that bordered Tennessee. It was worded as follows:

> I am writing a thesis on "Teaching Time in Vocational Agriculture". Since many rural schools within recent years have gone on the clock hour schedule, the United States Office of Education requires seven hours of instruction for each vocational agriculture student instead of ninety minutes per day. I am trying to find out how the new seven hour each week may be planned satisfactorily. If you have made a study of this problem in your state, I would appreciate your sending me the results.

The reply from the College of Education at Athens, Georgia is given below:

> I have your letter dated July 1939 in regard to "Teaching Time in Vocational Agriculture".
> We have made no study in this regard. I am very sorry I cannot help you.

It was signed by John T. Wheeler, Professor of Vocational Education.

The reply from Alabama Polytechnic Institute read:

> I have your recent letter inquiring as to how the teaching time in vocational agriculture is handled in our state.
> The question has as yet not given us any concern. Most of our schools are on the three quarters hour basis, one and one-half hours each day being given to vocational agriculture. A few of our schools, however, are on the hour basis and they are all at present giving two hours per day, or ten hours per week to vocational agriculture.
> The question of adjustment, however, is brewing in the State to some extent and that is a 'bridge' we will cross when we get to it. However, I am interested in seeing what your study reveals in reference to this matter and I would appreciate it very much if I could have the results of your study.

Here is a state in which the trend towards the one hour period is not so pronounced as it is in other states.

No reply was received from South Carolina.

West Virginia, apparently, is having experiences very similar to those in Tennessee, and the way in which they meet the situation involves the most important plans suggested in this study. The reply received from D. W. Parsons, Head of the Department of Rural Organization, read as follows:

> We have not made any study in the teaching time in vocational agriculture as regards the seven clock hour schedule. Our men are handling it by about three different methods.
>
> 1. They schedule a Vo-Ag class for 9:00 say for one hour, then schedule these students two days a week from 10:00-11:00 for a conference period. Then schedule another Vo-Ag class from 11:00-12:00, again using the 10:00-11:00 period for conferences. A similar plan can be used in the afternoon.
>
> 2. The second plan is somewhat similar. A Vo-Ag class is scheduled from 9:00-10:30 meeting every day. Another Vo-Ag class from 10:30-12:00, also meeting every day. This, of course, is the old ninety minute period obtained by splitting one of the hour periods.
>
> 3. The third plan that is being used where the others cannot be fitted in is to schedule the Vo-Ag class for five one hour periods each week then fitting in the other two hours at some free period of the teacher and the student. Sometimes the vocational agriculture alternates with physical education for the extra two hours which meets from two to three periods per week.
>
> I would be glad to receive a copy of your study when it is completed. I do not feel that the seven clock hours has relieved the situation as regards the scheduling of vocational agriculture.

There are two new suggestions in the above. One is that vocational agriculture classes be held for one hour period and then split half of another hour period that preceeds or follows the regular period. This would meet the requirement but in a

very large number of cases could not be worked because of the large number of conflicts it would cause. All students in both sections of agriculture sharing the split period would have to have a free period at that hour. In schools with four classes of vocational agriculture it would be necessary to combine at least two classes and this would in some cases result in the necessity of three or more classes having a free period at that hour. The shifting of the classes in the middle of a regular high school period would rarely be agreeable to the other high school teachers and would be especially annoying to the study hall teacher.

Another suggestion from West Virginia not included in this study is that of using an extra period alternately with a class outside the vocational agriculture department.

The only drawback to this plan would be the limited number of times that it can be used. Physical education classes in high schools often are not scheduled by grades, but by the students of all grades that happen to have a free period when it is held. Such a cosmopolitan class will not alternate with a regular first, second, third, or fourth year class.

The next reply was a letter from Carsie Hammonds, Head of the Agricultural Education Department, University of Kentucky.

> We have made two extensive studies of teaching time, one in 1930 and the other in 1935, but have made no study of the influence of the clock hour arrangement.

It was known that the Department of Agricultural Education

at Ohio State University had started a study on the "Amount and Distribution of Time in the teaching of Vocational Agriculture", so a special letter was sent to that department asking for the results of their study. The following reply was received:

> A typed copy of the study of distribution of time was sent to Washington to Dr. F. W. Lathrop of the United States Office of Education. There was no summary brief or abstract mimeographed so that we have nothing here that can be sent to you at this time. The study was a WPA project under the direction of Professor McClelland.

A copy of the Ohio questionnaire, however, was obtained through the Department of Agricultural Education, University of Tennessee.[1] There is evidence that this questionnaire was identical or almost identical to one used by the Department of Education, University of North Carolina.

The Department of Education of the University of North Carolina completed the only full study that was made of the problem by any of the states bordering Tennessee. A copy of their reply is given as follows:

> In reply to your inquiry I am sending you under separate cover a copy of a study of the distribution and amount of time in teaching vocational agriculture which was made about two years ago. I think this will give you some helpful information on your problem.
>
> Some ten years ago we had the problem of hour periods in the public schools. It came gradually so we had time to work out the problem. For the most part we found it more satisfactory to arrange the schedule in three one-hour periods a week and two two-hour periods a week scheduled consecutively. I know it is difficult in some cases to do this so that the hours are not always scheduled consecutively, but practically all teachers find that the more satisfactory.

---

1. Distribution and Amount of Time in teaching Vocational Agriculture Questionnaire Ohio State University, Department of Agricultural Education.

Apparently the study in North Carolina was made according to a uniform plan of study decided upon at a conference of state directors. The following paragraph is written in the foreword of the study:

> At the last meeting of the State Directors Association held in Chicago considerable time was given to the time element in the teaching of vocational agriculture. As a result a committee was appointed, made up of several state directors, selected from various states to work in cooperation with Dr. F. W. Lathrop, United States Office of Education, during the following year and report at the next meeting of the State Directors Association.[2]

The North Carolina study follows almost an exact outline of the Ohio State questionnaire, and the Foreword shows that both studies were made in cooperation with Dr. F. W. Lathrop, United States Office of Education. It is likely that the North Carolina study is a good example of the study made from the standpoint of state directors throughout the country. A copy of the report subsequently made to the State Directors Association was not sent for because this report would deal with the situation for the entire country. It was felt that Tennessee conditions would be more accurately represented by a complete study from a neighboring state.

The principal parts of the North Carolina study consists of:

1. The study of the present amount and distribution of

---

2. The Distribution and Amount of Time in the Teaching of Vocational Agriculture. Study #9 North Carolina State College of Agriculture and Engineering. p. 1.

time used for the teaching of vocational agriculture in the high schools of North Carolina for the fiscal year 1935-1936.

2. The judgments of teachers of vocational agriculture relative to the minimum time required for adequate training of persons in vocational agriculture.

3. A list of the different ways of scheduling vocational agriculture courses under different time schedules. Questionnaire method.[3]

The first part of this study deals with the same subject as Chapter VII of my study. It differs from my study in that it treats of the time requirement as being 960 hours for a full four year course and not as it is written in Vocational Education Bulletin No. 1, which specifies not less than seven clock hours a week for the school year.[4]

The North Carolina study was made three years earlier than this study and showed a smaller proportion of schools on the hour period schedule. It is likely true that when the Tennessee study was made, the number of schools in North Carolina which had adopted the one hour schedule had increased considerably. The following figures show a comparison between the two states as to time schedules as shown in the two studies.

---

3. Loc. cit.

4. Statement of Policies for the Administration of Vocational Education, Vocational Educational Bulletin No. 1, Feb. 1937, pp. 45-46.

TABLE X. COMPARISON OF TIME SCHEDULES OF SCHOOLS IN NORTH CAROLINA AND TENNESSEE STUDIES

Study	Year made	Schools reporting	60 minute periods	45 minute periods
North Carolina	1935-1936	204	103	101
Tennessee	1938-1939	85*	60	22

*Three Tennessee schools returning questionnaires had irregular schedules.

In the Tennessee study ten of the sixty schools with 60 minute periods fulfilled the requirement. In the North Carolina study 28 of 103 schools with 60 minute periods fulfilled the requirement.[5] The percent of schools on the clock hour schedules that fulfilled the requirement according to these two studies were North Carolina 27%, Tennessee 16 2/3 %.

In reading the North Carolina study one gets the impression that only time given to instruction in the vocational agriculture regular class periods was counted. Yet the question arises in the mind of the reader, why was the requirement changed to 960 hours for a four year course from the Office of Education's ruling of seven clock hours per week? Does this give recognition to the including of supervision of farm programs as part of organized instruction? Is such supervision carried on during the summer months also included as part of organized instruction?

One of the factors in judging the efficiency of the teach-

5. Op cit. North Carolina Study #9, p. 8.

ing of vocational agriculture is the degree to which the teaching applies to the boys home and farming needs. Using this as a yardstick there is no better teaching that the instructor can do than that which he is able to do in farm program supervision. This writer believes that the instructor is justified in counting this as part of his organized instruction.

Nowhere in the North Carolina study is there any indication that special out-of-class assignments were ever counted as part of the teaching time.

The studies made of the instructors preferences for teaching time were unlike in important respects. The first of the differences was that in North Carolina a complicated process of tabulating different farming sections with different enterprises and different types of farming was used to determine the difference in needs for amount and distribution of teaching time under varying conditions. In the Tennessee study the instructors were simply asked to express their preference for a minimum time for using certain procedures effectively, and their estimate as to how many times each procedure was used each year. No divisions were made according to section, enterprises, and types of farming.

The conclusion of this part of the North Carolina study reads as follows:

> It does not seem from the tabulations based on selected counties according to types of farming that the kinds of enterprises in these communities influence the preference of teachers for weekly distribution of time for class instruction. Teachers working in the three different types of farming areas prefer about the same time for instruction.

This means that the value of the Tennessee study is likely not lessened by failure to take into account different types of farming while seeking to determine instructors' preferences.

The second difference was the dealing with the problem on a long time basis by the North Carolina study. Instructors were asked if they thought that 960 hours of instruction was enough for a four year course in vocational agriculture to prepare them for farming. The replies were as follows:

Number yes	169
Number no	43
Total	212 out of 216.[6]

The North Carolina teachers felt, however, that these students after they left school would need further vocational instruction to assist them in becoming established in farming. The number of teachers who considered further instruction necessary was 185 to 18 who thought that no further training was necessary.

The third difference between the two studies was that the North Carolina study asked the instructors to express preferences for certain combinations of periods for effective teaching of vocational agriculture as opposed to the simple statement of time preference for certain procedures in the Tennessee study. Combinations of time were given on the North Carolina Questionnaire

6. Ibid.,p. 15

as follows: 2 - 120" meaning two one hundred and twenty
3 - 60"
minute periods and three sixty minute periods each week. The results of this study was as follows:

Number of Teachers	Distribution preferred	Number of Teachers	Distribution preferred	Number of Teachers	Distribution preferred
105	5-90"	2	3-90" 2-45"	1	2-90" 3-60"
18	5-60"				
14	2-120" 3- 60"	2	3-160" 2-120"	1	5-30"
				1	5-30" 1-180"
12	2-60" 3-120"	2	4-60" 1-120"		
				1	5-90"
9	7-60"	2	5-60" 2-60"		2-60"
6	5-60" 1-120"			1	5-90" 2-90"
		1	2-60" 3-90"		
6	5-90" 5-90"			1	4-60" 2-120"
		1	5-90" 1-120"		
6	8-60"			1	3-45" 2-90"
5	5-120"	1	5-60" 5-120"		
4	4-60" 2-120"	1	5-90" 3-45"	2	15-90"
3	6-60"			2	6-90"
			Total Teachers	211	

7

7. Ibid., p. 24.

The foregoing combinations were given in answer to the question,

In your school what weekly distribution of time do you consider ideal for effective teaching?[8]

It is hard to understand how many of the combinations can possibly be adjusted to modern high school schedules. Twelve of these combinations have more than the 420 minutes each week for organized instruction that is required. The 15-90" combination would have a total of 1350 minutes each week. Two other combinations would have 900 minutes a week each. Unless the instructors sending in these recommendations are teaching in schools with class schedules far different from the schedules studied in Tennessee these combinations are far more ideal than practical. The combination giving 1350 minutes a week to each class, would provide 22½ hours weekly or 4½ hours daily. Four such classes as this would leave very little time for anything else but sleeping.

The most popular selection is the 5-90" combination being favored by 105 teachers or almost half of the 211 teachers replying. This combination, perhaps, would be the most popular with any group of vocational agricultural instructors. On the one hour schedule this combination is very seldom possible. Only about 12% of the instructors favored the use of the long and short periods on alternate days, when the long period was 120" and the short period was 60". Less

8. North Carolina Study #9. Loc. cit.

than 9% of the instructors favored the 5-60" combination that is so often forced upon vocational agriculture departments by the present trend towards the one hour class period in the rural high schools.

There is not much difference between the results of this study and the Tennessee results where the instructors preferred long periods for field trips and shopwork and one hour periods for class recitation and laboratory exercises.

The adjustment of the class schedule so as to provide the required amount of teaching time was apparently the only device considered in the North Carolina study. This would, perhaps, in a large number of cases involve the combining of classes, but the combination of classes is not discussed. Some of the combinations of classes may be understood to make use of the instructors free periods, but the difficulties sometimes encountered in making such a schedule and the disadvantage of using the free period are not discussed.

Out of class assignments is apparently not considered as a device, nor is there any discussion of including supervision of farm programs as part of the organized instruction.

I would suggest that this study is an extensive and complete study of the problem, and that it deals with the difficult and often impossible situations met by the instructors in a fair and understanding way. It apparently treats with the arrangement of the vocational agriculture classes in the high school

schedule as an individual problem for each instructor, but it suggests ideal combinations where it is possible to use them. Some of the instructors with very large class enrollments and a full load of four or five classes are left in a difficult position by the failure to recognize out of class assignments or supervision of farm programs as part of organized instruction.

Some of the instructors are also likely to feel depressed when they read in the North Carolina study the suggestion that if their all-day students are not getting the required number of hours instruction in a four year course, these students be given the needed instruction by making them members of a part-time class after graduation. One of the factors that is limiting the amount of teaching time that the instructor is able to give his all-day classes is the increasing teaching burden he is forced to carry because of the increase of the enrollment in his all-day classes. To add to the part-time program of such an instructor is simply adding to his teaching burden from two sources instead of one.

The problem is one that will not be easily solved. It is probably more vital to the continued success of vocational agriculture than is generally realized. More studies will probably be necessary and it may even become necessary on the part of the Office of Education to adopt some changes in policy.

CHAPTER XII

CONCLUSIONS AND RECOMMENDATIONS

It was shown in Chapter III that teaching in vocational agriculture is far more effective when ample time is provided for teaching farm jobs on the farm . Long periods of time are necessary for this teaching. A suggested schedule for the vocational half day was presented as Figure 4 in Chapter V, illustrating original time ideals.

Even the time requirements of the Office of Education fall far short of the ideal time schedules for most effective teaching. It is becoming more and more difficult to meet this time requirement in an increasing number of rural schools with vocational agriculture departments. Many instructors already find it impossible to meet it.

There is one plan that the instructor of vocational agriculture may follow each year that will often improve the situation, and may sometimes enable him to meet the full requirement. During the summer months he should consider the enrollment prospects for his department for the coming year, and make plans for a schedule of vocational agriculture classes according to those prospects. This schedule should provide the required amount of organized instruction. He should then take his tentative schedule of agriculture classes to the principal before the schedule of classes for the entire school has been

drawn up. The principal may be asked to conform the schedule for the entire school to the proposed agriculture schedule in so far as possible. The principal is more likely to grant such a request before he has spent time and work on a schedule for the school. In this case the school schedule would have to be discarded before the request of the vocational agriculture instructor could be granted. This plan has the added advantage of acquainting the principal with many of the needs of the vocational agriculture department at a time when he is free from other school responsibilities. In most cases, however, this can only be expected to make the situation better without effecting a complete solution. At best it is a temporary remedy and must be repeated every year.

It was demonstrated in Chapter V that only a very few instructors in schools on the clock hour basis are able to schedule their agriculture classes so as to give seven hours of class instruction each week. It was further shown that such schedules, even where possible, forced too heavy a teaching load on the instructor during the school day. Many instructors have four agriculture classes in their departments, and a few have five classes, including the seventh or eighth grades.

The statistics given in Chapter VI show that not all students in vocational agriculture are being given the required amount of organized instruction. They show also that there is no uniformity among agriculture students of the same school as

to the number of hours of organized instruction that each is given in addition to the regular scheduled five hours of class instruction.

By comparing the teaching loads of instructors to the degree of fulfillment of the teaching time requirement, we are not able to show definitely that these teaching loads constitute a potent factor in limiting the ability of the instructor to give to his agriculture classes all the added teaching time required. Graphs 1 and 2 in Chapter VII apparently show that those instructors with the heaviest teaching loads are able to give approximately one-half of the required teaching time in addition to the regularly scheduled five one hour classes. About one-half of the teachers replying to the questionnaire felt that the teaching burden is a factor effecting teaching time in vocational agriculture.

One other factor effecting teaching time was considered important by many of the instructors. This was their inability to conform the schedules of vocational agriculture classes to the schedules of other school classes.

Neither of these two factors that make it difficult and often impossible to draw up acceptable class schedules for vocational agriculture are likely to change for the better. As time goes on each one of the two is more likely to change in a way that will add to the difficulties.

In checking their preferences for teaching time for ef-

fective teaching by different procedures, the instructors showed a preference for 90 and 120 minute periods for field trips and shopwork. They preferred the 60 minute period for classroom and laboratory exercises. They estimated that classroom and laboratory exercises are used about 75% of the teaching time, and that field trips and shopwork are used about 25% of the time. This indicates that, according to present practices, about three periods of 60 minutes are required to each one period of 90 or 120 minutes. This is a condition that has been forced on the vocational agriculture instructors by the present set up of the rural schools, but there are no indications that a more favorable condition will develop.

Use of free period for instruction, individual out-of-school assignments, and combining classes were the three most important devices used to enable the instructors to give added teaching time to their students. There are other devices of minor importance. As has been pointed out, the use of these devices does not enable all of the instructors to fully live up to the requirement.

Nearly all of Tennessee's neighboring states, according to their replies to a letter requesting results of any studies that might have been conducted by them, have made no systematic study of the problem. They admit being concerned over the unfavorable situation.

The North Carolina study shows the situation in that state in 1935-1936 as somewhat better than the situation in

Tennessee in 1938-1939. However, they were facing the same difficulties that are being faced in Tennessee, with the probability that their situation became worse from 1936 to 1939.

There is nothing in the North Carolina study to demonstrate that an effective solution of the problem can be more quickly arrived at by an elaborate and expensive study than can be gotten from a more brief study that seeks out the simple elements that are responsible for the present predicament of vocational agriculture.

What are these simple elements?

The first one is that there is no vehicle for carrying the national program of vocational agriculture other than the rural school system. The second element is that this school system has developed and continues to develop educational trends unfavorable to the carrying out of a program of vocational agriculture as it was originally intended that it should be carried out.

Therefore, we must face the situation realistically and adjust the policies of vocational agriculture to the rural school system.

The county superintendent and the rural school principal are drawn from educational fields entirely different from the field of vocational education. The extent to which these school officials have been trained for their positions is continually on the increase, but this training is far better fitted to the needs of formal education than it is fitted to the needs of

vocational education. Likewise the teachers of subjects other than vocational agriculture are being better trained for their work and they come to the rural schools with new ideas about fulfilling the needs of their various courses. They introduce new subjects and they ask for more time for the old subjects. There are several such teachers in each school, but there is only one agriculture instructor. The wise course for the officials of vocational agriculture to follow is to work with the forces and not against them.

It should first be realized that the fundamental purpose for any adjustment is to bring about more efficient teaching. We must also accept the fact that efficient teaching in vocational agriculture will require sufficient time and facilities for teaching farm jobs under farm conditions. How then can we provide efficient teaching under the present conditions?

There is small possibility of adjusting the rural school system to make better provisions for the needs of vocational agriculture. Necessary adjustments must, therefore, be made by the vocational agriculture departments or by changing the policies of the Office of Education.

When the agriculture instructor finds that it is impossible for him to provide sufficient time to meet the federal requirement in the regular class schedule, there is only one thing that he can do to solve the problem. He can reduce the size of his department until proper adjustment can be made. This reduction would have to be done with the consent of the county superintendent

and the principal. In some counties the school officials insist on all high school classes having twenty or more students to each class. By reducing his enrollment the instructor will make possible class combinations, affording extra periods for added instruction, and still have each class large enough to meet this requirement. There would also be a smaller number of students to have conflicts with other classes.

Seventh and eighth grade agriculture students could be dropped in schools with a large enrollment of high school vocational agriculture students.

The general attitude towards reducing the size of vocational agriculture departments is not known. The North Caroline study considered this as one way of meeting the problem, but remarked,

> we are training only two-thirds of the farm boys enrolled in the schools now indicating considerable selection already.[1]

We can, however, find figures to show that this training is given to many who never make use of it.

---

1. Distribution and Amount of Time in the Teaching of Vocational Agriculture. Study #9, North Carolina State College of Agriculture. p. 6.

The following table is taken from an Ohio study.

TABLE X. VOCATIONAL AGRICULTURE STUDENTS IN OHIO FARMING IN 1935.

Leaving school	Percent farming		
	Total group	From homes on farm	From homes not on farm
1929-1934	59.5	64.6	16.8
1924-1929	41.0	47.7	9.9
1918-1924	26.0	28.0	7.4

2

The results of this study would indicate that when considered from the standpoint of the students who have definite plans for remaining on the farm there is much room for reducing the size of the vocational agriculture departments.

Those who are familiar with the objectives of vocational agriculture and who know the present teaching situation might suggest that one slight change in the policy of the Office of Education would help the instructor in meeting the requirement for teaching time. This change would be a statement recognizing supervision of the farm programs and the directed out-of-class activities as organized instruction.

The fundamental purpose of the seven hours per week requirement is to give at least two long periods each week for

2. H. G. Kenestrich, "Percent of Students on Farms", Ag.Ed. Jan. 1939, p. 134.

field trips, shopwork, or laboratory exercises. Two periods out of five would thus have sufficient time for sound vocational training procedures. The same purpose could be realized by requiring 282 hours of organized instruction each year, 112 hours of this to be in the field, laboratory, or shop. By recognizing supervision of farm programs and directed out-of-school activities as part of this requirement, and by encouraging these programs as a source of teaching material, it is probable that the other class periods could be motivated and made far more interesting to the students.

The supervised farm program gives scope for making use of all the best teaching procedures that the teacher may have at his command. The teaching is done on the farm or at the home.

Professor G. A. Schmidt in 1926 published a study of the value of the project method in the teaching of vocational agriculture and pointed out in this volume that the project method made full use of all the important laws of learning.[3] The projects of the vocational agriculture students constitute an important part of their supervised farm programs.

One has but to check through the pages of Agriculture Education to realize the high regard that vocational agriculture instructors hold for the teaching value of the supervised farm program. One writer asks,

> What better opportunity is to be had for promoting initiative, perseverance, responsibility, thrift and

3. G. A. Schmidt, Projects and the Project Method in Agricultural Education, pp. 57-67.

cooperation than through the thorough planning and execution of supervised practice? [4]

Warren Gibson, vocational agriculture instructor of Oregon City, Oregon, takes each Monday off for project visitation. The students are excused from all agriculture classes to make these visits. The instructor reports that the agriculture classes for the rest of the week are vitalized by this procedure.

There are a great many agricultural activities carried on by the various vocational agriculture departments that have tremendous value in developing the civic and cooperative characteristics of the students as well as furnishing some first class agricultural training. This type of out-of-school activities may justifiably be included also as part of the instructors organized instruction. The responsibility of the instructors for developing and maintaining these activities have constantly been impressed upon him by teacher trainers, supervisors, and state directors. The summer teacher conferences always stress these activities as an important part of his work.

At West Fargo, North Dakota, there is held an annual marketing day for students of vocational agriculture in that section. The students bring the stock that they have raised on their projects to the market where it is marketed cooperatively. No student likes to have his stock lower the quality

4. I. T. Ehstrom "Suggestions for Motivating and Supervising the Home Practice Program" . Ag. Ed. June 1938.

of the group as a whole, though there is no competition among the students themselves. The market is open for three days each year for this purpose, usually about the middle of October. The school principal and officials recognize the value and importance of this practice and do not hesitate to excuse the students.

In Knox County each year members of the Future Farmers in the district are excused from school during the Tennessee Valley Agricultural and Industrial Fair for two or three days and allowed to work with the Future Farmer exhibits where all the prize vegetables, corn eggs, chickens, tobacco, honey and shop exhibits for East Tennessee are shown. Their experiences at the fair give them an interest in learning how to produce better quality farm crops and animals, and spur them on to greater skill in making or repairing farm equipment in the farm shops.

Endless examples of the value of the home farm work and its attendant activities could be quoted here. Practically every one familiar with this part of the vocational agriculture program agrees that it gives far more purpose and motivation to students' learning than any other part. It is a year around program, and requires much time on the part of both the instructor and the student. Develop this program to the fullest extent, tie the classroom instruction securely to it, and there is every reason to believe that such a program will add to the

efficiency in the teaching of vocational agriculture.

The Office of Education holds tenaciously to a policy that it believes vital to efficient training in vocational agriculture; rural school officials are judged cooperative by instructors of vocational agriculture, the instructors themselves will make almost any effort to solve a difficult and confusing problem. Certainly the solution of this problem can be worked out with entire satisfaction to all and without loss in teaching efficiency, if each of these three groups will get together in a spirit of give and take.

SELECTED BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

Annual Report, Tennessee Department of Education, Nashville: 1936.

Annual Report, Tennessee Department of Education, Nashville: 1938.

Charter, W. W., Curriculum Construction, New York: The Macmillan Company, 1923.

Distribution and Amount of Time in the Teaching of Vocational Agriculture, Study #9, North Carolina University, College of Agriculture and Engineering, Raleigh: 1937.

Distribution and Amount of Time in the Teaching of Vocational Agriculture, Questionnaire, Ohio State University, College of Agriculture, Columbus: 1936.

Hamtram, O. T., "Suggestions for Motivating and Supervising the Home Practice Program", Agriculture Education Magazine, June 1938.

Kemsetrick, H. T., "Percent of Students on Farms", Agriculture Education Magazine, Jan. 1938.

Marshall, Joe Leon, "Curriculum Trends in Tennessee", University of Tennessee Thesis, Knoxville: 1936.

McMillan, Martha, "Economy and the Emer Period", American School Board Journal, Vol. 88, Feb. 1934.

Program of Studies, National Survey of Secondary Education, U. S. Office of Education, Monograph No. 10.

Program of Work for Tennessee Teachers of Vocational Agriculture, State Department of Education, Division of Vocational Education, Nashville: 1937-1938.

Report on National Aid to Vocational Education, Document 1004, Volumes I and II, 63 Congress, Washington: 1914.

Schmidt, G. A., New Methods in Teaching Vocational Agriculture, New York and London: The Century Co., 1924.

Schmidt, G. A., Projects and the Project Method in Agricultural Education, New York and London: The Century Co., 1926.

Smith-Hughes Act, Vol. 51, Part 10, 63rd Congress, 2nd session, Pages 9503-9505.

Statement of Policies for the Administration of Vocational Education, Vocational Education Bulletin, Number 1, U. S. Dept. of Interior, Feb. 1937.

Thorndyke, Edward L., Educational Psychology. Briefer Course. New York: Columbia University Press. 1925.

Wheeler, John T., Methods in Farmer Training. Atlanta: Turner E. Smith Company, 1926.

APPENDIX

APPENDIX

PARTS OF SMITH-HUGHES ACT PERTAINING TO VOCATIONAL AGRICULTURE REGULATIONS.[1]

Some of the more important provisions of the Smith-Hughes Act for the financing and the administration of instruction in vocational agriculture were as follows:

1. Federal funds for instruction in Vocational Agriculture.

In giving the provisions of the Act in this chapter, the section of the Act will be given and the provisions will be quoted as written in the Act.

Section 2. That for the purpose of cooperating with the States in paying the salaries of teachers, supervisors, or directors of agricultural subjects there is hereby appropriated for the use of the states, subject to the provisions of this act, ... for the fiscal year ending June thirtieth, nineteen hundred and twenty-four, the sume of $2,000,000; for the fiscal year ending June thirtieth, nineteen hundred and twenty-five, the sum of $2,500,000; for the fiscal year ending June thirtieth, nineteen hundred and twenty-six and annually thereafter, the sum of $3,000,000. Said sums shall be allotted to the states in the proportion which their rural population bears to the rural population in the United States, not including outlying possessions, according to the last preceding United States census.

---

1. Smith-Hughes Act. Congressional Record, Vol. 51, Part 10, 63rd Congress, 2nd session, pp. 9503-9505.

Section 4. That for the purpose of cooperating with the States in preparing teachers, supervisors, and directors of agricultural subjects and teachers of trade and industrial and home economics subjects there is hereby appropriated for the use of the States for the fiscal year ending June thirtieth, nineteen hundred and eighteen, the sum of $500,000; for the fiscal year ending June thirtieth, nineteen hundred and nineteen, the sum of $700,000; for the fiscal year ending June thirtieth, nineteen hundred and twenty, the sum of $900,000; for the fiscal year ending nineteen hundred and twenty-one, and annually thereafter, the sum of $1,000,000. Said sums to be allotted to the States in the proportion which their population bears to the total population of the United States, not including outlying possessions, according to the last preceding United States Census;

2. Creation of State boards for Vocational Education.

That in order to secure the benefits of the appropriations provided for in sections two, three, and four of this Act, any state shall, through the legislative authority thereof, accept the provisions of this Act and designate or create a State board, consisting of not less than three members, and having all necessary power to cooperate, as herein provided, with the Federal Board for Vocational Education in the administration of the provisions of this Act. The State board of education or

other board having charge of the administration of public education in the State, or any State board having charge of the administration of any kind of vocational education in the State may, if the State so elect, be designated as the State board, for the purposes of this act.

3. Creation of a Federal Board for Vocational Education.

Section 6. That a Federal Board for vocational Education is hereby created, to consist of the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, the United States Commissioner of Education, and three citizens of the United States to be appointed by the President, by and with the advice and consent of the Senate. One of said three citizens shall be a representative of the manufacturing and commercial interests, one a representative of the agricultural interests, and one a representative of labor. The board shall elect annually one of its members as chairman. In the first instance one of the members shall be appointed for one year, one for two years, and one for three years, and thereafter for three years each. The members of the board other than the members of the Cabinet and the United States Commissioner of Education shall receive a salary of $5000 per annum.

The board shall have power to cooperate with State boards in carrying out the provisions of this Act. It shall be the duty of the Federal Board for Vocational Education to make or cause to have made studies, investigations, and reports, with particular reference to their use in aiding the States in the

establishment of vocational schools and classes and in giving instruction in agriculture, trades and industries, commerce and commercial pursuits, and home economics.

In this section it is provided that the Commissioner of Education may make such recommendations to the board relative to the administration of the Act as he may from time to time deem advisable.

4. Federal funds for study and administration of the Act.

Section 7. That there is hereby appropriated to the Federal Board for Vocational Education the sum of $200,000 annually, to be available from and after the passage of this Act, for the purpose of making or cooperating in making the studies, investigations, and reports provided for in section six of this Act, and for the purpose of paying the salaries of the officers, the assistants and such office and other expenses as the board may deem necessary to the execution and administration of this Act.

5. State plans.

Section 8. That in order to secure the benefits of the appropriation for any purpose specified in this Act, the State board shall prepare plans showing the kinds of vocational education for which it is proposed that the appropriation shall be used; the kinds of schools and equipment; courses of study; methods of instruction; qualifications of teachers; and, in the case of agricultural subjects the qualifications of supervisors

or directors; plans for the training of teachers; and, in the case of agricultural subjects, plans for the supervision of agricultural education, as provided for in section ten. Such plans shall be submitted by the State board to the Federal Board for Vocational Education, and if the Federal board finds the same to be in conformity with the provisions and purposes of this Act, the same shall be approved. The State board shall make an annual report to the Federal Board for Vocational Education, on or before September first of each year on the work done in the State and the receipts and expenditures of money under the provisions of this Act.

6. State expenditure of federal funds.

Section 9. That the appropriation for the salaries of teachers, supervisors or directors of agricultural subjects and of teachers of trade, home economics, and industrial subjects shall be devoted exclusively to the payment of salaries of such teachers, supervisors, or directors having the minimum qualifications set up for the State by the State board, with the approval of the Federal Board for Vocational Education. The cost of instruction supplementary to the instruction in agricultural and in trade, home economics, and industrial subjects provided for in this Act, necessary to build a well rounded course of training, shall be borne by the state and local communities, and no part of the cost thereof shall be borne out of the appropriations herein made. The moneys expended under the provisions of this Act, in cooperation with the States, for the salaries of teachers,

supervisors, or directors of agricultural subjects, or for the salaries of teachers of trade, home economics and industrial subjects, shall be conditioned that for each dollar of Federal money expended for such salaries the State or local community, or both, shall expend an equal amount for such salaries; and that appropriations for the training of teachers of vocational subjects, as herein provided, shall be conditioned that such money be expended for maintenance of such training and that for each dollar of Federal money so expended for maintenance, the state or local community, or both, shall expend an equal amount for maintenance of such training.

7. Minimum requirements for vocational education.

Section 10. That any state may use the appropriation for agricultural purposes, or any part thereof allotted to it, under the provisions of this Act, for the salaries of teachers, supervisors, or directors of agricultural subjects, either for the salaries of teachers of subjects in schools or classes or for the salaries of supervisors or directors of such subjects under the plan of supervision for the State to be set up by the State board, with the approval of the Federal Board for Vocational Education. That in order to receive the benefits of such appropriations for the salaries of teachers, supervisors, or directors of agricultural subjects the State board of any state shall provide in its plan for agricultural education that such

education shall be that which is under public supervision and control; that the controlling purpose of such education shall be to fit for useful employment; that such education shall be less than college grade and 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; that the state or local community, or both, shall provide the necessary plant and equipment determined upon by the State board, with the approval of the Federal Board for Vocational Education, as the minimum requirement for such education in schools and classes in the State; that the amount expended for the maintenance of such education in any school or class receiving the benefit of such appropriation shall be not less annually than the amount fixed by the State board, with the approval of the Federal board as the minimum for such schools shall provide for directed or supervised practice in agriculture, either on a farm provided for by the school or other farm, for at least six months per year; that the teachers, supervisors, or directors of agricultural subjects shall have at least the minimum qualifications determined for the State by the State board, with the approval of the Federal Board of Vocational Education.

There is nothing written in the Act that requires a minimum amount of time for organized instruction in vocational agriculture. The authority that the Federal Board of Vocational

Education used to hold the state to a time requirement was that granting them the power to hold up federal funds to each state until the plans for that state had been approved. State plans had to show provisions for 450 minutes of organized instruction in the beginning. Later they had to show seven hours per week. These provisions were enforced for the government in the beginning by the Federal Board of Vocational Education and later by the Commissioner of Education.

There have occurred a few changes in the administration of vocational education by the federal government that pertains to matters discussed in this study.

Executive order no. 6166 was issued on June 10, 1933, providing that,

> the functions of the Federal Board of Vocational Education are transferred to the Department of the Interior, and the Board shall act in an advisory capacity without compensation.[2]

The Secretary of the Interior pursuant to Executive Order no. 6166 on October 10, 1933, issued an order effective immediately providing that,

> the functions of said Board are hereby assigned to the Commissioner of Education and the necessary personnel under the Board will be reorganized as a sub-division of the Office of Education under the general supervision of the Commissioner of Education who has been directed to proceed with the necessary reorganization of the Office of Education.[3]

The Division of Vocational Education was organized within

---

2. Statement of Policies for the Administration of Vocational Education. Vocational Education Bulletin No. 1, Feb. 1937, p.2.

3. Ibid., p. 6.

the Office of Education with an Assistant Commissioner for Vocational Education as administrative head. Within the Division of Vocational Education there has been organized four administrative services:

1. An agricultural education service.
2. A commercial education service.
3. A home economics education service.
4. A trade and industrial education service.

For each of these services there is a chief who acts under the general direction of the Assistant Commissioner of Vocational Education, and Federal Agents. The Federal Agents are the administrative agents in the field.

It became necessary in 1936 for congress to appropriate additional funds for vocational education and to make new provisions for federal administration under changing conditions. The George-Deen Act was accordingly passed by the 74th Congress, and was approved June 8, 1936.[4] This act made no change in the old provisions of the Smith-Hughes Act that effects this study.

4. Ibid., Foreword p. IV.