FACTORS ASSOCIATED WITH DECISIONS OF MICHIGAN TEACHERS TO REMAIN IN OR TO LEAVE THE FIELD OF TEACHING VOCATIONAL AGRICULTURE

by

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CHAPTER I

INTRODUCTION

The problem caused by teachers leaving the profession is one which has received the attention of educators for many years. It has been considered from many standpoints including: the problems caused by teachers moving from one position to another, problems caused by teachers leaving the profession, problems of training replacements for teachers who leave, and the effect of teacher-turnover on the quality of the educational program in local communities.

This chapter will (1) present materials to justify consideration of the problem, (2) state the problem to be studied and list the questions which the study will attempt to answer, (3) present basic definitions necessary for an understanding of the text, and (4) state the assumptions on which parts of the investigation are based.

JUSTIFICATION FOR THE PROBLEM.

The following excerpts point out the importance of the problem as brought out by other investigators:

Elliott found the median years of service of teachers who were employed in Michigan in 1931-32 was 8.54 years. The median years of service for teachers in smaller districts was somewhat less than for the state as a whole. For fourth-class school districts, those having a population of 10,000 to 25,000, the

median was 7.23 years, for township districts 6.93 years, and for rural agricultural districts, the median was 6.58 years.[1]

The problem caused by teachers of vocational agriculture leaving the profession is basically no different than with any other group of teachers. Training is expensive, and the constant turnover increases the cost of maintaining an adequate supply of teachers. The turnover also results in lowered accomplishment in the development of programs of vocational agriculture which will serve the greatest number of people and provide for maximum development of those who are enrolled.

Vocational Education in the Years Ahead, a bulletin of the United States Office of Education, states that:

> The loss of employed teachers of vocational agriculture is more of a factor in the teacher supply situation than is the number of new teachers trained and placed in vocational agriculture. In the year before the war affected the program, there were 9039 employed teachers of vocational agriculture. Approximately 5700 employed teachers left the work in the three war years to June 30, 1944. This was 68 per cent of the average number of employed teachers for these years. Approximately 49 per cent of the 5700 employed teachers leaving the work entered the armed services. Heavy loss of employed teachers was not entirely a wartime problem. The peace time period, 1936-41, representing years of great expansion in vocational agriculture, also was characterized by heavy teacher losses. In these six years (1936-41), 8.1 teachers were employed per 100 employed teachers due to growth in the program, while an additional 10.3 teachers per year were employed per 100 employed teachers to re-

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[1] Eugene B. Elliott, A Study of the Supply and Demand for Teachers in Michigan (Michigan Education Association, Lansing, Michigan: 1937) pp. 88-90.

> place those leaving the work. In the two war years 1942 and 1943, employed teachers leaving the work for the armed services and for other employment numbered 25.1 teachers per year per 100 employed teachers, or 244 per cent of the pre-war percentage of 10.3.[2]

Tenure is defined by Martin as, "The length of time one agriculture teacher serves in one place." Martin reported that the mean tenure of teachers of vocational agriculture in the period 1922-23 to 1927-28 was 2.41 years. He also found that there was a decline in turnover of teachers from 56.7 per cent in 1922-23 to 23.6 per cent in 1926-27.[3]

According to Spanton, for the United States as a whole, "The average tenure of teachers of vocational agriculture in present positions in 1943-44 was 5.1 years, . . . compared with the 1942-43 average of 4.7 years."[4] Spanton also reports that for the year 1943-44, in the North Central Region, 27.5 per cent of the teachers were in their first year of tenure in the school they were serving, and that 69 per cent had had five years or less of service in their present positions.

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[2]United States Office of Education, Vocational Education in the Years Ahead. (United States Office of Education, Vocational Division, Bulletin 234, General Series No. 7, Washington, D.C.: Government printing Office, 1945), pp. 134-135.

[3]Vergy G. Martin, "Tenure of Agricultural Teachers in Mississippi," (unpublished Master's thesis, Cornell University, Ithaca, New York, 1927), p. 47.

[4]William T. Spanton, Tenure of Agricultural Teachers in Present Positions (United States Office of Education, Vocational Division, Miscellaneous 3180, Washington, D. C.: United States Office of Education, 1943-44), p. 1.

Data for Michigan indicate similar figures with respect to teachers leaving the field of teaching vocational agriculture. For the biennium 1942-43 and 1943-44, 21.7 per cent of teachers of vocational agriculture were lost to the profession.[5] In 1944-45 and 1945-46 the losses of teachers leaving the teaching of vocational agriculture were 14.7 and 12.5 per cent respectively.[6]

In an interview with the Chief of Agricultural Education for the State Board of Control for Vocational Education in Michigan on July 13, 1950, he indicated that the losses of teachers of vocational agriculture in Michigan for the year 1949-50 amount to approximately ten per cent. This figure corresponds closely with both the percentage figure of pre-war losses on a national basis and the losses of teachers from the profession in Michigan during the pre-war years.

In writing about the use of time by teachers of vocational

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[5] State Board of Control for Vocational Education, Biennial Report of the State Board of Control for Vocational Education for the Biennium Ended June 30, 1944 (State Board of Control for Vocational Education Bulletin 209 Rev., Lansing, Michigan: State Board of Control for Vocational Education, 1944), p. 20

[6] State of Michigan, Department of Public Instruction, Ninety-Eighth Report of the Superintendent of Public Instruction for the Biennium Ended June 30, 1946. (Lansing, Michigan: Department of Public Instruction, 1946), p. 86

agriculture in Michigan, Sweany states:

> It has been found that teachers who have been in their departments three to nine years, have larger enrollments, and a larger number of projects than teachers who have been in their departments less than three years. This fact suggests that the teacher does not get maximum results from effort expended when new in his department. For this reason teachers should select schools where they can teach for a number of years . . .
>
> Teachers should realize that they are able to accomplish more with less effort if they stay in a community from four to nine years. Too long a time, on the other hand, seems to decrease the efforts of the teacher.[7]

In the period from 1925-26 to 1940-41, 375 new teachers of vocational agriculture began their work in Michigan. These figures are based on records on file in the office of the State Board of Control for Vocational Education in Michigan.[8] These teachers were graduates of Michigan State College and had taken the courses required for certification in Michigan as teachers of vocational agriculture. Of this group of 375 men, 74 or 19.7 per cent were teaching vocational agriculture in Michigan during the school year 1948-49. This figure represents a loss of 80.3 per cent of the total group from the field of teaching vocational agriculture in Michigan.

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[7] H. Paul Sweany, Use of Time by Teachers of Vocational Agriculture in Michigan (State Board of Control for Vocational Education, Research Bulletin 2, Lansing, Michigan: State Board of Control for Vocational Education, 1945), p. 12.

[8] State Board of Control for Vocational Education. Card Index file of the State Board of Control for Vocational Education, Lansing, Michigan, 1949.

Data are not available to determine the occupations of all of the men who have left, or to determine causes of their leaving the teaching of vocational agriculture. The writer personally knows that a few are deceased. Some are superintendents of schools, and others are serving as county agents, extension specialists, soil conservationists and employees of Farmers' Home Administration.

Many persons feel that there is a loss to the individual and a loss to society when individuals change occupations, as these teachers who left have done. In Chapter two of his book, The Problem of Vocational Guidance, Myers discusses the problem of waste due to failure to get into the right occupation and the resulting changes of occupation. He points out that:

> The degree of economic waste to the individual varies inversely as the number of common elements found in the two occupations . . . . Obviously the total amount of loss is greater when the change is made between two occupations requiring extensive preparation than when it is made between two that require little preparation.[9]

Myers goes on to discuss the economic loss to employers due to changes of employees from one occupation to another. He says, "The real measure of the employers' loss is the cost of bringing a new worker to the degree of proficiency attained by one who left."[10]

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[9]George E. Myers, The Problem of Vocational Guidance. (New York: The Macmillian Co., 1929), pp. 23-25.

[10]Ibid. pp. 23-25.

The same reasoning applies to teachers of vocational agriculture, when competent, trained individuals leave the profession for some other occupation.

Olney states:

> Teachers who move frequently will admit, no doubt, that they do not nor cannot promote the ideas and plans of the teacher whom they succeed, from the point where he left off. It is necessary for the newly employed teacher to establish himself in the school by much duplication of the former teacher's work with the people in the area before he can contribute much in advancing the agricultural program.[11]

Bundy also discusses the problem in an editorial. He describes the effect of moving after short periods when he says:

> Many instructors feel that they have been in a community long enough after three or four years, when actually they are just beginning to get programs under way which will bring about desired results.[12]

The authors of Vocational Education in the Years Ahead, also have a similar point of view when they say:

> The wasteful use of man power giving rise to the practice of frequent replacement of experienced teachers of vocational agriculture has resulted in less effective programs than would a practice enabling a successful teacher to remain in the same community over a period of years.[13]

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[11] Roy A. Olney, "Mobility," Agricultural Education Magazine, 16: 223, June, 1944.

[12] Clarence E. Bundy, "Long Tenure for Achievement," Agricultural Education Magazine, 17: 23, August 1944.

[13] United States Office of Education, Loc. cit.

Regardless of their present status, much of the time and money spent for specific training of former teachers of vocational agriculture has been lost. The teacher has lost his contribution of time and money for that part of the training which he is not using. Society has lost in terms of the expenditures which were contributed for the training, and in terms of the loss in quality of program resulting from the changes of teachers in the community.

Except for teachers who are complete failures, the needs of communities can best be served by teachers who remain in the same position for relatively long periods of time.

The discovery of factors which are associated with decisions of teachers of vocational agriculture to leave or to remain in the profession should prove helpful to students who must decide for or against preparation for teaching vocational agriculture, to teacher-educators who have responsibility for counseling and guidance of students enrolled in courses in agricultural education, and to school administrators and state supervisors of agricultural education in helping them discover what factors in their programs in the secondary schools may cause teachers to remain in the field of teaching vocational agriculture.

THE PROBLEM

The association of certain factors with decisions of Michigan teachers of vocational agriculture to remain in or to leave the field of teaching vocational agriculture will be the subject of the present study.

No attempt will be made to determine the relative quality of the work of teachers or to distinguish successful and unsuccessful teachers. It is not assumed that teachers leave, in every instance, because of failure in teaching. Neither is it assumed that the best teachers of vocational agriculture always remain in teaching positions in the secondary schools.

The study will attempt to discover some of the similarities and some of the differences of the group of teachers who left, and the group of teachers who remained in the field of teaching vocational agriculture. It will include the collecting, analyzing, and interpreting of data in an attempt to answer the following questions:

1. Are there any differences in the relative interest in technical agriculture, and in professional education courses at the college level, which are associated with the decisions of teachers to remain in or to leave the field of teaching vocational agriculture?

2. Are there any differences in the college activities of teachers of vocational agriculture which are associated with their

decisions to remain in or to leave the field of teaching vocational agriculture?

3. Are differences in age of teachers at various points in their pre-teaching career associated with their decisions to remain in, or to leave, the teaching of vocational agriculture?

4. Is membership in professional and farm organizations associated with decisions of teachers to remain in or to leave the field of teaching vocational agriculture?

5. Are there differences in the number of technical and professional credits, earned after receiving the Bachelor's Degree, which are associated with decisions of teachers to remain in or to leave the field of teaching vocational agriculture?

6. Are there factors in the situation in the high school in which a teacher is employed which are associated with decisions to remain in or to leave the field of teaching vocational agriculture?

7. Are there factors affecting tenure of teachers which are associated with their decisions to remain in or to leave the field of teaching vocational agriculture?

8. Is there an association between outside employment of teachers of vocational agriculture and their decisions to remain in or to leave the field of teaching vocational agriculture?

9. Are there indications of growth in teachers of vocational agriculture which can be plotted? Can the growth of an

individual teacher be compared with the growth pattern of a group with which a comparison is desired?

DEFINITIONS

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

1. A teacher of vocational agriculture is one who is employed by a public school and who teaches one or more classes of vocational agriculture for which reimbursement is paid the school from funds provided by the Smith-Hughes[14] and succeeding acts.

2. A department of vocational agriculture is a department of a public school in which vocational agriculture is taught under the provisions of the Smith-Hughes[14] and succeeding acts.

3. A State Farmer is a student of vocational agriculture, and a member of a local chapter of Future Farmers of America, who is elected to the degree at the State Convention of the Future Farmer Association.[15]

4. Teachers who have left are those who began teaching vocational agriculture in Michigan between July 1, 1936 and June 30, 1941, and who left the field of teaching vocational agri-

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[14] United States Congress, Public Laws of the United States of America Passed by the Sixty-Fourth Congress 1915-1917, (Vol. XXXIX, Part 1, Washington, D. C., Government Printing Office 1917, pp. 929-936.

[15] Official Manual for Future Farmers of America, (Baltimore, Maryland: French-Bray Printing Company, 1947), p. 15.

culture before June 30, 1949. They are described as "those who have left," "teachers who have left," and "those no longer teaching."

5. Teachers who remained are those who began teaching during the same period as those who left and who had taught continuously to June 30, 1949, except for military service. They are described as "those who are still teaching," "those remaining," "those still teaching," and "teachers who remained."

6. Tenure is defined as the length of service of one teacher in one school.

7. A teacher-year is one teacher, teaching one year. The number of teacher-years represented by either group of teachers can be computed by the addition of the products of the number of teachers and the number of years taught by each teacher. For example, if four teachers each taught ten years and three teachers each taught five years, the total number of teacher-years represented by these seven teachers would be 40 plus 15 or, 55 teacher-years.

8. The Winston Dictionary defines profession as, "a calling or vocation; especially, one that requires learning and mental, rather than manual labor; ...."[16] Unless otherwise in-

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[16] William Dodge Lewis, Henry Seidel Canby, and Thomas K. Brown, Editors. The Winston Dictionary, College Edition (Chicago: The John C. Winston Co., 1942), p. 770.

dicated, the use of the word "profession" will refer to the teaching of vocational agriculture.

9. Freshman week tests refer to the American Council on Education Psychological Examination for College Freshmen and to the Cooperative English Test which were given to students at the time of their first enrollment at Michigan State College.

10. Technical agriculture major refers to the technical agriculture field in which the student of agricultural education secured the greatest number of credits. It is sometimes referred to as, "the field of major interest in a technical agriculture field."

11. Professional credits beyond the Bachelor's Degree are college credits earned in education, educational psychology, or guidance courses.

12. Technical credits beyond the Bachelor's Degree are college credits earned in technical agriculture or related fields of science, mathematics, or economics. For example, credits earned in farm management, soils, dairy and the like were classified as technical credits. In this study credits earned in chemistry, economics, physics, entomology, and the like were classified as technical credits.

13. Per cent of time on vocational agriculture refers to the proportion of the day or week of a teacher of vocational agriculture which was devoted to the program of vocational agri-

culture and for which reimbursement was paid under the provisions of the Smith-Hughes Act.

14. All-day classes of vocational agriculture refer to classes in vocational agriculture, made up of high-school pupils who are taking vocational agriculture as one of their high-school subjects.

15. All-day pupils in vocational agriculture are pupils who are enrolled full time in the high-school and who are taking vocational agriculture as one of their high-school subjects.

16. A factor is defined as, "One of the elements that combine to produce a result."[17] As the word is used here, it refers to one of the elements that may influence a teacher of vocational agriculture in his decision to remain in, or to leave, the field of teaching vocational agriculture.

ASSUMPTIONS

1. It is assumed that changes in salary, which represent continuously increasing deviations above the average salary received by teachers of vocational agriculture from year to year are indicative of growth of the teachers in-service. As a rule, teachers of vocational agriculture are allowed increases in salary somewhat in line with measurable and visible accomplishments. During periods when salaries are rising due to scarcity of

[17] Webster's Collegiate Dictionary, 5th edition, (Springfield, Mass., G. C. Merriam Co., Publishers, 1937) p. 358.

teachers or other factors, it is expected that any teacher who is retained will be granted some increase in salary. However, teachers who are granted increases materially in excess of the normal for the group are assumed to have grown to a point where they have demonstrated accomplishments in their programs which will warrant the increase in salary.

2. One of the visible and easily measurable items resulting from teacher growth is the item of enrollment in the all-day classes of vocational agriculture. It is assumed that teachers who are growing in-service are more likely to attract pupils because the program provided meets the students' needs and interests. Instances can be cited in which enrollment in all-day classes consistently dropped under the direction of a teacher, while other instances can be cited in which enrollment in all-day classes increased in each department in which the teacher was employed.[18]

3. It is assumed that increase in the per cent of time spent on vocational agriculture is, in general, a third indication of growth of a teacher. As teachers develop to a point where they are conducting a truly functional program of training in agriculture for all the people of the area who need and can profit by instruction in vocational agriculture, including out-

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[18] See for example, the changes in all-day enrollment for teachers Number 77 and Number 7 respectively, Figures 15 and 16 on pages 128 and 129.

of-school youth and adults, they will necessarily spend a larger portion of their time on the program of vocational agriculture and a correspondingly smaller portion of their time on non-vocational work.

4. It is assumed that the number of State Farmers developed and the ability to consistently develop State Farmers for election is an indication of growth of the teacher. The State Farmer degree in the Future Farmer program represents a high degree of accomplishment on the part of the pupil and also represents a high degree of accomplishment on the part of the teacher who provides guidance, training, and motivation to develop pupils who are able to qualify for the degree. It takes a teacher who is himself growing to bring about such development in his pupils.

This assumption may be supported by statements of a number of writers in other fields. For example, Troyer and Pace writing on Evaluation in Teacher Education, state:

> ....Teachers grow when they have a feeling of achievement and when they have respect of others ... When they set up .... purposes within their reach ... The clarity of purpose increased when they saw definite results in the lives of their students.[19]

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[19] Maurice E. Troyer and C. Robert Pace, Evaluation in Teacher Education (Washington, D. C.: American Council on Education, 1944), p. 300-301.

Other workers, including LaDuke,[20] Rostker,[21] Barr,[22] and others, studied growth of teachers using the improvement of pupils as one of the criteria.

These evidences tend to lend validity to the assumption that the development of State Farmers by teachers of vocational agriculture is an indication of growth on the part of teachers.

5. It is assumed that the number of young-farmer and adult-farmer classes taught by a teacher of vocational agriculture is an indication of growth of the teacher. In making this assumption, it is recognized that there are limitations, in terms of time and energy, to the number of such classes a teacher can conduct. However, it takes a teacher whose concept of the job of teaching vocational agriculture is expanding and developing, to recognize the need and to accept the challenge of this part of the program. For this reason the assumption that the number of young-farmer and adult-farmer classes taught each year is evidence of growth is justified.

The assumption is further justified on the basis of an

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[20] C. V. LaDuke, "Measurement of Teaching Ability," Journal of Experimental Education, 14: 75-100, September, 1945.

[21] L. E. Rostker, "The Measurement of Teaching Ability," Journal of Experimental Education, 14: 6-51, September, 1945.

[22] A. S. Barr, "Measurement and Prediction of Teaching Efficiency: A Summary of Investigations," Journal of Experimental Education, 16: 203-283, June, 1948.

editorial which appeared in The Agricultural Education Magazine in August, 1941 in which the author states in part, that, "growth results, when a man does something different than he had been doing or does the same thing in a new and better way." The article goes on to suggest that, for many teachers, the development of young-farmer or adult-farmer classes would be the "new activity" which would result in growth.[23]

6. It is assumed that, for teachers who are not failures, more effective programs of education in vocational agriculture will result from reasonably long tenure in a school. This assumption is adequately supported by statements of Sweany,[24] Olney,[25] and Bundy.[26]

The above assumptions, concerning the growth of teachers which are made in this study, will not be valid for schools in which a teacher is arbitrarily held to teaching non-vocational classes or is not allowed to organize and conduct young-farmer or adult-farmer classes in vocational agriculture. The experience of the writer leads him to believe that a large majority

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[23] Editorial, "For Professional Growth Try Something New," The Agricultural Education Magazine, 14: 23, August, 1941.

[24] Sweany, Loc. Cit.

[25] Myers, Loc. Cit.

[26] Bundy, Loc. Cit.

of school administrators and boards of education in Michigan would welcome an expansion of the program in vocational agriculture. For these schools the assumptions are valid. For the relatively few administrators and boards of education who will not allow expansion of the program of vocational agriculture, the assumptions would not be valid.

CHAPTER II

SOURCES OF DATA AND METHOD OF PROCEDURE

Chapter I presented the justification for the problem and stated the problem to be studied, together with a listing of definitions and assumptions necessary for an understanding of the present investigation.

This chapter will describe the sources of data and the methods of procedure to be used in the study. The discussion will be organized under the following headings: selection of the group to be studied, the sources of data, method of analysis of the data, and limitations of the study.

SELECTION OF THE GROUP TO BE STUDIED

To secure satisfactory data it was necessary to select a group of teachers who had left and of others who had remained in teaching of vocational agriculture so that comparisons could be made between the two groups. Also, it was desired to select a group which would be large enough for reliable statistical computations. A period of time which was as nearly normal as possible in terms of economic stability was desirable, and a period of time which was far enough in the past to allow teachers to change to new positions after entering teaching was necessary.

The state administration of programs of vocational education in Michigan changed on July 1, 1936, with the appointment of

a new director of vocational education.[27] This change brought about modifications in policy and program so that it was desirable to select a period of time which would not be affected by the difference in policies under the two administrations.

The period of time between July 1, 1936 and June 30, 1941 was chosen as most desirable because:

1. It coincides roughly with the introduction of new policies and administration of the program of vocational education in Michigan.

2. It is a period which followed the severe economic depression of the early 1930's and is before the declaration of war by the United States.

3. The period from July 1, 1941 to June 30, 1949 is sufficient to allow teachers to become settled in a reasonably permanent occupation.

On the basis of the foregoing considerations it was decided to include in the study all of the teachers who began teaching vocational agriculture in Michigan between July 1, 1936 and June 30, 1941 who were graduates of Michigan State College except the following:

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[27] State Board of Control for Vocational Education, First Came the Farms: History of Vocational Agricultural Education in Michigan. (State Board of Control for Vocational Education, Bulletin 289, Lansing, Michigan: State Board of Control for Vocational Education, 1944). p 33.

1. Those who began their teaching as combination superintendents and teachers of vocational agriculture.

2. Those who left teaching and returned so that they were teaching vocational agriculture in the school year 1948-49. Teachers who left for military service and returned to teaching were not considered as having left. Those who left for military service and did not return to teaching were considered as having left.

3. Those who taught less than one year.

4. Those who left for military service and who were killed in the war.

This selection resulted in a sample of 105 teachers, of whom 78, or 74.3 per cent had left, and 27, or 25.7 per cent, were still teaching vocational agriculture in the school year 1948-49.

SOURCES OF DATA

The following sources of data regarding the teachers and their programs were investigated, and with one exception, all were used.

1. Data regarding tenure, annual salary, enrollment in classes of vocational agriculture, and number of young-farmer and adult-farmer classes, were secured from the records of the State Board of Control for Vocational Education in Michigan.

2. The Office of the Registrar at Michigan State College allowed use of records regarding credits of teachers, date of

birth, and other items appearing on the transcript of graduates of the college.

3. The Office of Alumni Relations at Michigan State College furnished data on occupations of each person and his present location.

4. The Office of the Board of Examiners at Michigan State College made the Freshman Week test scores available.

5. The Office of the Michigan School Employees Retirement Fund Board agreed to furnish data regarding salary and tenure of teachers. However, it was not needed, as sufficient data were found in the Office of the State Board of Control for Vocational Education.

6. Official reports of the United States Office of Education and of the State Board of Control for Vocational Education in Michigan were used to secure information on the number of teachers leaving the field of teaching vocational agriculture. These sources are indicated by footnotes at appropriate places in the text of Chapter I.

7. Additional data were secured by means of a questionnaire mailed to the present and former teachers of vocational agriculture. Each questionnaire was accompanied by a personal letter requesting the return of the questionnaire and explaining the purpose of the study. It was explained that the data would be used for a thesis; also, that it would be helpful in the selection and guidance of students in college who might be interested in agricultural education.

Follow-up letters were sent, after approximately two weeks, to those who did not return the questionnaires. In two instances a third letter was sent together with a second copy of the questionnaire. One-hundred per cent of the letters were answered, and in only one case was the questionnaire not returned. One former teacher attempted to answer the questions in a letter. As many as possible of his replies were used. However, they were very incomplete.

Copies of the questionnaire, samples of the letters sent with the questionnaires, and samples of the follow-up letters appear in the appendix on pages 167-180 . In the appendix will also be found copies of the forms used for recording the data from the other sources listed on pages 22-23.

METHOD OF ANALYSIS OF THE DATA

Data were analyzed by comparing the group of teachers who left and the group of teachers who remained in the field of teaching vocational agriculture, for each of the factors studied. The comparisons included a determination of the significance of the difference of percentages. In some cases when it was desired to determine the significance of the difference of numbers, the chi-square technique was used.[28] Where it seemed appropriate, graphs have been used to portray differences.

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[28] C. H. Goulden, Methods of Statistical Analysis (New York: John Wiley and Sons, 1939), pp 38-42; 89-94.

In cases where differences were not statistically significant at the five per cent level, but where the differences were similar to results reported by other workers, attention has been called to them and comparisons have been made with results of other studies.[29]

Patterns of growth of teachers have also been illustrated by means of graphs so that the growth of an individual teacher can be contrasted with the pattern of growth of a group of teachers who left or of a group who remained. These comparisons may be used to observe evidences of characteristics in an individual which will indicate a tendency to remain in or to leave the profession.

LIMITATIONS OF THE STUDY

The writer recognizes many limitations of the present study. In the first place, factors that affect the decisions of people are many, varied, and complex. This study has been confined to an analysis of selected factors which can reasonably be secured either from official records or from a relatively simple questionnaire.

In the second place, the use of a questionnaire involves problems of interpretation, both on the part of the individual

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[29] Carter V. Good, A. S. Barr, and Douglas E. Scates, The Methodology of Educational Research (New York: D. Appleton-Century Co., 1935), p 624.

who completes it and on the part of the individual compiling the data.

A third limitation of the study is in relation to time. Association of certain factors with decisions of teachers to remain in or to leave the field of teaching vocational agriculture, in the period studied, does not necessarily mean that the same factors would be of equal importance at other periods. As Evenden, Gamble and Blue pointed out, there seems to be a relationship between 'prosperity' and 'depression' on the one hand and 'scarcity' and 'surplus' of teachers on the other.[30] Consequently caution is urged when application of findings is made to other situations at other times.

A fourth limitation exists from the standpoint of area. The present study is confined to graduates of Michigan State College and to the experience of Michigan teachers of vocational agriculture. The opportunities for employment, other than teaching, are undoubtedly different in many respects in Michigan than elsewhere. Such limitations must be recognized by the reader as he interprets the findings of this study and applies them in other situations.

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[30] Edward S. Evenden, Guy C. Gamble, and Harold G. Blue, National Survey of the Education of Teachers; Teacher Personnel in the United States. (United States Office of Education Bulletin 1933, Washington, D. C.: Government Printing Office, 1935), 2: 38.

CHAPTER III

REVIEW OF LITERATURE

Chapters one and two presented the problem of the present investigation and described the method of procedure to be used in the collection, analysis, and treatment of the data. This chapter will summarize the studies, reported prior to April 1950, which are related to: (1) factors associated with teachers leaving the field of teaching and factors associated with tenure, (2) reasons given by teachers for leaving the field of teaching vocational agriculture, (3) occupations entered after leaving the teaching of vocational agriculture, (4) high school and college history of teachers of vocational agriculture, and (5) growth of teachers in-service. The major findings of studies will be presented, and comparisons of the studies reviewed with the present study will be made.

STUDIES OF FACTORS ASSOCIATED WITH TEACHERS LEAVING THE FIELD OF TEACHING AND OF FACTORS ASSOCIATED WITH TENURE

The problem caused by teachers leaving the profession or by teachers moving from one school to another is an important one, as evidenced by the fact that it has been the concern of writers and research workers in education for many years.

Cooper found that for New York state the average tenure

of teachers was six and three-quarters years.[31] Also Norton found that in 1924 the average number of teachers required in the United States to replace those leaving the profession was 16 per cent with a variation between states of from four per cent in Florida to 47 per cent in Wyoming, with ten per cent for Michigan.[32] According to Woody, fourth-class school districts in Michigan in 1925-26 needed 12.47 for every 100 teachers for replacements of those permanently lost to the profession. Rural districts needed 15.85 per 100 teachers to meet the loss of teachers from the profession. For the year 1928-29 corresponding figures for the same kind of districts were 10.89 and 14.64 respectively.[33]

Evenden, Gamble and Blue, writing on Teacher Placement in the United States, state that:

> ..... the longer period of preservice training expected of secondary teachers, the higher salaries paid to secondary teachers which encourage elementary teachers over a period of years to secure the additional training which makes the transfer to the secondary school possible, the tendency to provide high minimum salaries which encourage the use of teaching as a temporary 'stepping stone' occupation, the availability of remunerative work in other occupations, the curtailment of special educational

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[31] Homer E. Cooper, Cost of Training Teachers (Baltimore, Maryland, Warwick and York, 1924), p. 27.

[32] John K. Norton, The Problem of Teacher Tenure, (National Education Association Research Bulletin, Vol. 2, No. 5, November, 1924. Washington, D. C.: National Education Association, 1924), Table 3, p. 144.

[33] Clifford Woody and others, The Certification and Training of Teachers in Michigan. (Lansing, Michigan: The Michigan Education Association, March, 1937), pp 54-55.

> services, the reorganization of elementary and secondary curricula and the establishment of junior colleges -- these and other factors have tended in recent years to shorten the period of actual teaching service, especially of elementary teachers.[34]

Evenden, Gamble and Blue also report data for Michigan showing, "reasons for the demand for new senior high school teachers". They list reasons as follows: predecessor died, 1.1 per cent; predecessor retired, 3.2 per cent; predecessor entered college, 9.9 per cent; predecessor married, 14.1 per cent; predecessor left to teach in another state, 7.2 per cent; predecessor entered another occupation, 8.9 per cent; predecessor on leave of absence, ill, etc., 4.7 per cent; newly created position, 14.4 per cent; and miscellaneous, 6.3 per cent.[35]

Tiegs evaluated techniques of teacher selection. He developed a twelve point rating scale for use in rating teachers which includes health, character, loyalty to the United States, force, cooperation, interest in school work, tact, personality, mental power, professional knowledge, teaching type, and teaching ability. Since the presence of these characteristics in an individual indicates the kind of an individual who would be selected, it seems likely that the absence of these characteris-

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[34] Evenden, Gamble, and Blue, op. cit., pp.31-32.

[35] Evenden, Gamble and Blue, op. cit., pp 90-91.

tics might indicate the kind of individuals who would be likely to leave the teaching profession.[36] On the other hand, it is likely that many who possess the above characteristics in high degree also leave the profession for reasons other than the lack of these qualities.

To some extent, factors associated with teachers leaving the field of teaching are also factors associated with success in teaching. Ullman studied The Prognostic Value of Certain Factors Related to Teaching Success. Among other conclusions, Ullman states that:

> Success in practice teaching is the best single measure of teaching success ..... Factors other than practice teaching which have been shown to have predictive value are: socio-economic status, academic and professional marks, social intelligence, general intelligence, interest in teaching, and knowledge of the principles of teaching.[37]

Deficiencies of teachers of vocational agriculture listed by Armstrong include: undesirable personality, lack of farm experience, devoting too much energy to work outside the school, poor teaching technique, failing to cooperate, and inability to

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[36] Ernest Tiegs, An Evaluation of Some Techniques of Teacher Selection. (Bloomington, Illinois: Public School Publishing Company, 1928), pp 53-54.

[37] Roy R. Ullman, The Prognostic Value of Certain Factors Related to Teaching Success (Ashland, Ohio: The A. L. Garber Company, 1931), p. 97.

maintain discipline. These characteristics represent factors which might cause teachers to leave the profession due to failure, although Armstrong did not study the association of the factors with leaving the profession but rather with success in the profession.[38]

The qualities that seem to be significant in predicting success in teaching vocational agriculture are listed by Love as: reliability, belief in the profession, affability, promptness, vision, industriousness, judgment, tact, sincerity, cooperation, enthusiasm, persistence, self control, sense of humor, confidence, methodicalness, sense of expression, and good ideals.

Love states in his conclusions that probably teachers rank about as follows: 7 per cent superior; 24 per cent good; 38 per cent medium; 24 per cent poor; 7 per cent very poor. The highest 31 per cent will get promotions either in the profession or outside the profession of teaching vocational agriculture, the middle group will remain in teaching and the low 31 per cent will leave the profession.[39]

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[38] Fred E. Armstrong, "Characteristics of Teachers of Vocational Agriculture; A Study to Facilitate a More Careful Selection of Candidates for Teacher-Education in Agriculture," Agricultural Education Magazine, 13: 132-33, January, 1941.

[39] Henry M. Love, "A Study to Determine Some of the Qualifications Necessary to Success in Teaching Vocational Agriculture," Unpublished Master's thesis, Virginia Polytechnic Institute, Blacksburg, Virginia. 1932, p. 103.

The study by Love does not seem to support his conclusion that 31 per cent of the highest ranking teachers will gain promotions either in the profession or outside. Neither does it support the statement that the low ranking 31 per cent will leave the profession. However, it is of interest that the observation is made by Love that some of the individuals ranking high, as well as those who rank low, in the traits listed above, will leave the profession.

The median total experience in teaching of those no longer teaching is reported by Knox to be 4.3 years and, for those still teaching, 6.2 years. Of those who had left teaching, 64.2 per cent had taught less than six years and 9.5 per cent had taught less than eight years. Of those now teaching, 48.5 per cent had taught less than six years and 30.2 per cent more than eight years. The median total experience for all qualifiers was 5.4 years.[40]

According to Pulley, 60.4 per cent of the 432 men qualified at Virginia Polytechnic Institute between 1918 and 1940 were teaching in 1940, and 58 per cent of the graduates in agricultural education were teaching vocational agriculture in

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[40] Melbourne C. Knox, "Occupational Experiences of Men Qualified at Iowa State College Since 1923 to Teach Vocational Agriculture," (Unpublished Master's thesis, Iowa State College, Ames, Iowa, 1937), p. 64.

Virginia at that time.[41] This is a decided contrast to the teachers in the present study in which only 25.7 per cent of the teachers who began teaching in the period 1936 to 1941 were teaching in 1948-49. It also represents a higher percentage of teachers still teaching than is indicated by the figures reported by Spanton[42] for the United States or by Knox for Iowa.[43]

None of the above studies made comparisons between teachers who remained and those who left, for the purpose of determining reasons for leaving, and none made checks to determine differences which might exist between those who left and those who remained. The present study will determine the number and per cent of teachers who left and those who remained, in terms of the years of experience in teaching, and the number of years experience in each school.

The length of service of Pennsylvania high-school teachers was studied by VanHouten. He found that 44.92 per cent of the men teachers in general education from all types of school dis-

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[41] Mason H. Pulley, "A Follow-up Study of Graduates, Post-Graduates, and Those qualified to Teach by Taking Certain Classes in Agricultural Education at Virginia Polytechnic Institute Since 1918," (Unpublished Master's thesis, Virginia Polytechnic Institute, Blacksburg, Virginia, 1940) p. 38.

[42] Spanton, Loc. Cit.

[43] Knox, Loc. Cit.

tricts gave "higher salary" as their reason for changing positions. Other reasons given by ten per cent or more of the men teachers for changing positions included, "opportunity to teach grades or subjects preferred," for 10.98 per cent and "opportunity for advancement," for 19.05 per cent. VanHouten found causes operating to produce teacher turnover in the four classes of school districts in Pennsylvania were in order of importance: higher salary, opportunity for advancement, opportunity to teach subjects preferred, to be at home, to be near home, opportunity for further study, improved working conditions, leave of absence for study, different types of pupils, and location in or near a large city.[44]

These items may be compared with the reasons given by teachers in the present study for leaving their first positions. They may also be compared with the factors which were associated with decisions of teachers to leave or to remain in teaching vocational agriculture.

It is interesting to note that of the men teachers in general education studied by VanHouten in Pennsylvania, 38.21 per cent had had one to five years of service and 26.46 per cent had had six to ten years of service. This can be compared with the

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[44] Lyman H. VanHouten, Length of Service of Pennsylvania High School Teachers, (New York: Bureau of Publications, Teachers College, Columbia University, 1932), pp 102-103.

report by Knox for different years in which he states that the median total years of experience for teachers of vocational agriculture who were still teaching was 6.2 years.[45]

Martin found that the reasons given by teachers of vocational agriculture for leaving a school include: "to avoid friction with the head of the school and the school board," (most frequently mentioned), "better salary, better living conditions, and better communities."[46]

On the other hand, increases in salary, special preference for a special location and the desire to put over a program are listed by Martin as reasons given by teachers for remaining in a particular school.

STUDIES OF REASONS GIVEN BY TEACHERS FOR LEAVING THE FIELD OF TEACHING VOCATIONAL AGRICULTURE.

Low salary is quite generally given as one of the major reasons for leaving the profession of teaching, just as it was given as a major reason for teachers changing from one school to another.

Robles lists low salary as a reason given by teachers for leaving the profession. He says:

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[45] Knox, op. cit., p. 64.

[46] Martin, op. cit., p. 49.

> On the basis of the findings of this study it seems reasonable to conclude that:
>
> 1. Those individuals will stay in the profession for whom the job as a vocation is a stronger force toward tenancy than salary.
>
> 2. Salaries should be set at a level comparable with those offered by other agencies utilizing the services of similar employees if it is expected to retain the most idoneous personnel.
>
> 3. The individuals staying on the job are those exhibiting outstanding personal and professional traits...
>
> 4. Availability of opportunities for professional improvement and a sense of security seem to be additional factors toward the acquisition of idoneous personnel in the teaching profession.[47]

Preference for another occupation; limited opportunity for advancement (in teaching); salary too low; and lack of security are reasons listed by Canada which teachers in Nebraska gave for leaving the service of teaching vocational agriculture.[48]

The same reasons are reported by Gerhardt as undesirable features of the job according to Wisconsin teachers of vocational agriculture. In addition, these teachers added, "too much responsi-

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[47] Juan Robles, "Tenure," Agricultural Education Magazine, 22: 200,204, March, 1950

[48] Ralph W. Canada, "Why Nebraska Teachers of Vocational Agriculture Left the Service," (unpublished Master's thesis, Colorado College of Agriculture and Mechanic Arts, Fort Collins, Colorado, 1945), p. 53.

bility," "excess demands on time," and "overload of evening work," as features which they also felt were undesirable.[49]

Very similar reasons for leaving the profession of teaching vocational agriculture are reported by Sanders and Richards from replies of teachers which they received. They report items in addition to those listed by Canada and by Gerhardt as, "lack of support from the superintendent and principal," "routine classroom work," "consideration of health," and "better living and working conditions."[50]

Equally important to reasons reported for teachers leaving the profession, are reasons for teachers remaining in the profession or suggestions given by teachers which would help hold teachers in the profession. Teachers in Gerhardt's study listed "desire to teach," "valuable experience," "financial interests," and "lack of a more suitable opportunity," as reasons for remaining in teaching. Gerhardt lists, "opportunity for work with adults and young people in out-of-classroom work," "opportunity for service to the community," and "a variety of duties over a twelve-month period," as desirable features of the job of the teacher of vocational agriculture.[51]

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[49]Irving Gerhardt, "What Agricultural Teachers Say-- Why Agricultural Teachers Like or Dislike Their Job," American Vocational Journal, 24: 17, 22, September, 1949.

[50]H. W. Sanders and C. E. Richards, "Why Teachers of Vocational Agriculture Leave the Profession," Agricultural Education Magazine, 18: 94-95, November, 1945.

[51]Gerhardt, op. cit., p. 22.

Robinson classified responses from teachers as to "why they teach" as follows: attractive profession, love of teaching or of children, interest in the subject field, opportunities for service, financial response, family influence, influence of teachers, and accidental. These items may be compared with responses of teachers in this study as to their reasons for remaining in the field of teaching vocational agriculture.[52]

Factors underlying the choice of teaching as a profession were studied by Best. He found that a genuine interest in children was mentioned most often as the determining factor in decisions to teach.[53]

Sanders and Richards asked teachers for "suggestions they would make for securing and holding the highest type of teachers in the field of vocational agriculture." The replies they received were largely the reverse of the replies listed for leaving the profession. They included, "provide a more adequate salary schedule," "provide opportunity for advancement," "reduce the load of the teacher," "provide more careful selection of teachers and give them more thorough training in technical subjects," "limit

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[52]Donald W. Robinson, "Analysis of Motives for the Choice of a Teaching Career," (unpublished Doctor's thesis, University of Pennsylvania, Philadelphia, Pennsylvania, 1944), p. 31.

[53]John W. Best, "A Study of Certain Selected Factors Underlying the Choice of Teaching as a Profession," Journal of Experimental Education, 17: 201-259, June, 1948.

teachers' activities to those vocational in nature," and "give teachers a greater sense of security."[54]

These studies, like those having to do with tenure, are based on replies of teachers with no comparisons having been made between groups of teachers. It is planned, in the present study, to compare reasons given by teachers for leaving, with reasons given by teachers for remaining in the field of teaching vocational agriculture. Wherever possible the significance of differences between those who left and those who remained will be determined.

STUDIES OF OCCUPATIONS ENTERED BY TEACHERS AFTER LEAVING TEACHING OF VOCATIONAL AGRICULTURE.

The occupations entered after leaving the field of teaching may indicate the extent to which teachers who left are using their training and teaching experience in the new occupation.

Robinson listed present occupations of 134 men who left teaching. "Teaching out of state," and "teaching in private schools or college," accounted for 27 of the 134 men studied. Other occupations listed were, "military service," "executive," "sales," "accountant," "chemist," "clerical," "engineer," and so forth. There is no evidence in Robinson's study which would determine the relationship of previous training or experience to the present occupation.[55]

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[54]Sanders and Richards, op. cit., p. 95.

[55]Robinson, op. cit., p. 71.

In the field of vocational agriculture, the first occupation entered after leaving teaching will be affected at certain periods by induction into military service. Spanton reports occupations of teachers leaving vocational agriculture as of September, 1942. He reports 56.8 per cent in military service; 17.2 per cent in government agricultural agencies such as county agricultural extension service, soil conservation service, farm security administration, and others; 7.7 per cent in commercial industries, including defense industries; one per cent in state agricultural service; 2.6 per cent in education and college teaching; 4.4 per cent in vocational education, including state staffs and teaching out of state; 6.3 per cent in farming; and 4 per cent in miscellaneous.[56]

The report of the State Board of Control for Vocational Education for Michigan, covering the biennium ending June 30, 1942, states that the occupations entered by 39 Michigan teachers who left in the year 1941-42 were: army and navy, fifteen; government agencies, eleven; general education, five; farming, five; and miscellaneous, three.[57] Similar occupations to those

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[56] William T. Spanton, Teacher Losses and Supply in Vocational Agriculture — Relation to the War Effort, 1942-43 (United States Office of Education, Teacher Training Release No. 4, Miscellaneous 3005, Washington, D. C.: United States Office of Education, September, 1943), p. 13.

[57] State Board of Control for Vocational Education, Biennial Report of the State Board of Control for Vocational Education for the Biennium Ended June 30, 1942 (State Board of Control for Vocational Education Bulletin 209 Rev., Lansing, Michigan: State Board of Control for Vocational Education, 1942), p. 24.

reported by Spanton and by the Michigan report, except for military service and defense industries, were reported by Pulley at Virginia Polytechnic Institute.[58]

Beamer also studied present occupations of graduates of Virginia Polytechnic Institute since 1918. He found that 105 occupations were represented by 307 graduates of the institution, which, when grouped, included 45.6 per cent in vocational education; 14.4 per cent in other professional agricultural occupations; and 14.0 per cent in related agricultural occupations, with 8.1 and 14.9 per cent respectively in non-vocational and miscellaneous occupations.[59]

Canada's report also shows similar kinds of occupations entered by teachers who left teaching of vocational agriculture. He found that 27 per cent became county agents, 13.5 per cent entered farming or ranching, and 24.0 per cent entered Soil Conservation Service or Farmers' Home Administration.[60]

A somewhat more detailed listing of occupations entered by men who left the teaching of vocational agriculture appears

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[58] Pulley, op. cit., pp 23-26.

[59] R. W. Beamer, "A Follow-up Study of Virginia Polytechnic Institute Graduates in Agricultural Education Since 1918," (Unpublished Master's thesis, Virginia Polytechnic Institute, Blacksburg, Virginia, June, 1948), p. 47.

[60] Canada, op. cit., p. 56.

in a report by Davis which was written in 1928, before the existence of the Soil Conservation Service and the Farm Security Administration. He found the largest percentage of former teachers in general high-school teaching, with farming ranking next. Vocational agriculture teaching in other states, and the work of county agricultural agent rank next in order.[61]

Other studies, such as the ones reported by Gerhardt,[62] Knox,[63] and Sanders and Richards,[64] give similar results in terms of the kinds of occupations entered after leaving the teaching of vocational agriculture.

It is clear that teachers of vocational agriculture tend to enter occupations related either to agriculture or to teaching when they leave. Large numbers of them enter other professional agriculture occupations such as those of county agent, extension specialist, Soil Conservation Service employee, or Farm Security Administration employee, where they can use much of the training they received while in college.

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[61] Fred R. Davis, "What Happens to the Vocational Agricultural Student After He Leaves High School and What Happens to the Vocational Agricultural Instructor After He Leaves the Work," (Unpublished Master's thesis, Ohio State University, Columbus, Ohio, 1928), p. 32.

[62] Gerhardt, op. cit., pp. 17-22

[63] Knox, op. cit., pp. 25-27.

[64] Sanders and Richards, op. cit., p. 94.

The writer did not find any studies specifically planned to determine the portion of training and experience of teachers of vocational agriculture which was being used in the new occupation. The present study makes no attempt to arrive at such a determination, but is confined to reporting occupations entered by teachers who left teaching of vocational agriculture.

STUDIES OF HIGH-SCHOOL AND COLLEGE HISTORY OF TEACHERS OF VOCATIONAL AGRICULTURE

An analysis of certain pre-employment records and activities of teachers of vocational agriculture was made by Anderson in Pennsylvania. In his study, Anderson had as his purpose;

> to discover certain important pre-employment background factors which pertain to teachers of vocational agriculture, relating these factors to length of teaching experience and other generally accepted measures of success.[65]

Anderson makes the assumption that;

> length of teaching experience is accepted in this problem as one measure of a teacher's success. It is assumed that men who have taught vocational agriculture five to ten or more years are reasonably efficient and successful teachers.[66]

This assumption seems invalid, at least for periods in

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[65] Clarence Scott Anderson, Pre-Employment Records and Activities of Teachers of Vocational Agriculture (Pennsylvania State College Bulletin 333, State College, Pennsylvania: Pennsylvania State College of Agriculture and Experiment Station, 1936), p. 5.

[66] Ibid., p. 10.

which there are shortages of teachers of vocational agriculture. When there are shortages of teachers, school administraters may employ a teacher who is available but not recommended, rather than to try and get along without a teacher. On the other hand, a teacher may be highly successful and leave the field of teaching vocational agriculture. It should not be assumed that because he left, he was a failure as a teacher.

Anderson found that, "those who make early and settled decisions concerning teacher preparation .... are most likely to become successful teachers."[67] He also finds that there is a strong indication that native intelligence is a dependable factor in predicting teaching success.

In regard to extra-curricular work in college, Anderson found that there was no evidence that participation in sports, college publications, or social fraternities was associated with length of teaching experience. He did find that "there was some indication that length of teaching experience and membership in an honorary fraternity were associated."[68]

High college marks seemed to have a relation to greater length of teaching experience. Anderson states that, "evidence of a relationship between achievement in college subjects and

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[67] Ibid., p. 52.

[68] Ibid., p. 65.

length of teaching experience with professional courses and also with English appeared."[69]

The study by Anderson measures the association of length of teaching career and certain factors of high-school and college experiences and activities. The present study will compare selected factors of the college career for the group of teachers who left and those who remained. It will also compare the two groups in terms of college activities, college marks, participation in certain extra-curricular college activities and membership in honorary fraternities, to determine association of these factors with leaving or remaining in the profession of teaching vocational agriculture.

The amount of graduate credit earned by Missouri teachers of vocational agriculture was studied by Gutting. He found that, of the teachers he studied, 88.7 per cent had two or more hours of graduate credit. The average number of credits for those who had graduate credit was 17.6 hours.[70]

Gutting makes no comparison of these teachers with other groups, such as teachers who had left. A comparison may be made, however, between the data for the teachers of Gutting's

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[69] Ibid., pp. 42-43.

[70] Lloyd O. Gutting, "Relationships Between Tenure, Professional Training, and Salary of Vocational Agriculture Instructors," Agricultural Education Magazine, 11: 5, September, 1938.

study and the data for the group of teachers of the present study who remained in teaching vocational agriculture.

STUDIES OF THE GROWTH OF TEACHERS IN-SERVICE

The problem of teacher growth has been a problem of educators for many years. The annual report of the Superintendent of Public Instruction for Michigan in 1861 discusses the holding of eight county institutes for the improvement of teachers.[71]

The Superintendent of Public Instruction of Indiana, in 1872 reported that he conducted county institutes in Indiana. He says, "These are growing in popularity, efficiency and usefulness. They are now regarded as indispensable to our school system." He goes on to say that the institutes offered opportunity to help teachers with their problems and thereby to improve instruction.[72]

In 1897 a committee of the National Educational Association reported on the "great need for teacher training" of teachers in

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[71] J. M. Gregory, Superintendent of Public Instruction, Twenty-Fifth Annual Report of the Superintendent of Public Instruction for the State of Michigan for the Year 1861, (Lansing, Michigan: State of Michigan Printers, 1861), pp. 53-54.

[72] Milton Hopkins, Superintendent of Public Instruction for the State of Indiana, Twentieth Report of the Superintendent of Public Instruction for the State of Indiana, (Indianapolis, Indiana; Department of Public Instruction, 1872), p. 88.

service. The committee reported that the following means may be used for providing such training: organization of associations of teachers, summer school of several weeks, institutes, reading circles, and libraries.[73]

The writer has reviewed the reports of research studies in agricultural education and also in the field of general education and has found no studies dealing specifically with the growth of teachers of vocational agriculture in-service. Studies have been made in the field of agricultural education in which the amount of graduate credit earned was reported. Other studies have reported salary increments. Each of these may be taken as an indication of the growth of teachers.

Evenden discussed growth of teachers in-service. He finds that in many states renewal of certificates to teach is dependent on "growth" of teachers. Usually this growth is assumed on the basis of further training which is acquired by the teacher. Evenden also discusses the importance of summer sessions at college, graduate work, and follow-up and placement factors contributing to the growth of teachers in-service.

He listed means for in-service education of teachers for the purpose of stimulating growth as follows: teachers meetings,

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[73] National Educational Association, Report of the Committee of Twelve on Rural Schools, (Lansing, Michigan: University of Chicago Press; Reprinted by the Department of Public Instruction in Michigan, 1897), p. 77.

committee work, visiting days, leaves of absence, informal discussions, experimentation, reading circles, demonstration teaching, contributions to educational literature, membership in professional groups, teacher self rating, and many others. However, he does not indicate a means of measuring growth of teachers in terms of their actual accomplishment in the classroom or in terms of evidences of accomplishment in their work with pupils.[74]

Growth of teachers in-service has been discussed by a number of authors and lecturers. Steddard wrote a paper on the subject in which he discusses the studies and experiments planned by the American Council on Education. He emphasizes that certain concepts must be kept in mind when dealing with the problem. Concepts listed by Steddard are as follows:

> Growth of teachers must involve all personnel of the school.
> ... People do not grow in-service because of something that is done to them by someone else.
> ... The best growth takes place when the individual joins as a participant in initiating and planning the conditions that inspire growth.[75]

The State Board of Education in Michigan published a brief report of working groups at the Fourth Michigan Teacher

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[74] Edward S. Evenden, National Survey of the Education of Teachers: Summary and Interpretation (United States Office of Education Bulletin 1933, Vol. 6, No. 10, Washington, D. C.: Government Printing Office, 1935), pp. 134-36.

[75] Alexander J. Steddard, "The Growth of Teachers in Service," Educational Record, 20: 501-502, October, 1939.

Education Conference. These working groups list, "leads for encouraging teacher growth." They suggest that consideration should be given to such items as:

> "a sincere desire for improving professional competency," ..."opportunity for participation in the planning and formulation of the program by teachers who will be affected by it," ... "A recognition of the satisfactions and opportunities, other than salary, which encourage teacher growth," ... "satisfactions to teachers that may result from the maintenance and growth of a high level of teaching efficiency," ... "the need for trained leadership of operational units of the school," ... "and the use of the evaluative process for furthering the growth of teachers."[76]

The Home Economics Research Committee of the American Vocational Association, reports regarding teachers of home economics, that: "Many phases of teaching were satisfying to a large proportion of these teachers; helping with pupil growth, engaging in stimulating intellectual activities, ..."[77] This statement provides one clue to the measurement of teacher growth; namely, that which is reflected in the growth of pupils under the direction of the teacher.

Barr reviewed and summarized 141 studies of teacher

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[76] State Board of Education, Recognition and Evaluation of Teacher Growth in Service (The Michigan Cooperative Teacher Education Study, Lithoprinted Series No. 6, Lansing, Michigan: State Board of Education, June, 1942), pp 1-4.

[77] Home Economics Research Committee, Factors Affecting the Satisfactions of Home Economics Teachers (American Vocational Association Research Bulletin, No. 3, Washington, D.C.: American Vocational Association, 1948), p. 30.

growth which had been completed since 1900. He found that 19 of these studies used evidences of changes in pupils or of accomplishment of pupils as criteria for the measurement of teacher growth.[78]

This chapter has reviewed studies and other written materials related to the problem of teachers leaving the field of teaching, length of service in teaching, and measurement of the growth of teachers in-service. Many of the studies have reported data secured from teachers and others without making comparisons with other groups.

The present study will make statistical comparisons between teachers of vocational agriculture who have left and those who have remained, in relation to a number of factors which may be associated with leaving or remaining in the field of teaching vocational agriculture.

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[78] Barr, op. cit., pp. 203-282.

CHAPTER IV

COLLEGE RECORDS AND ACTIVITIES OF TEACHERS OF VOCATIONAL AGRICULTURE

In Chapter III, literature related to the present study was reviewed under the headings of: factors associated with tenure, reasons given by teachers for leaving the field of teaching vocational agriculture, occupations entered by teachers after leaving teaching of vocational agriculture, studies associated with high-school and college history of teachers of vocational agriculture, and studies of the growth of teachers in-service.

This chapter will present the data of the present study regarding college records and activities of the teachers of vocational agriculture who later left and of those who remained. Comparisons of the two groups will be made between high-school courses and units of work presented for admission to college, transfer from other institutions to Michigan State College, college marks, scores of tests given during freshman week, college activities, and age of the two groups at various points in their pre-teaching careers.

The analysis of data involves, for the most part, a comparison of the teachers who left the field of teaching vocational agriculture and those who remained in the field. Tests for the significance of the difference between two means,

or of the significance of the difference between two percentages have been used, at appropriate places.[79]

HIGH-SCHOOL COURSES AND UNITS OF WORK SUBMITTED FOR ADMISSION TO COLLEGE

Table I shows the number and per cent of teachers who presented units in certain high-school subjects for admission to Michigan State College. At the time these men were in high-school, college admission, quite generally, required two major and two minor sequences.[80] One of the major sequences was prescribed as English. There was also a strong tendency to require that the

TABLE I

NUMBER AND PER CENT OF TEACHERS WHO PRESENTED CERTAIN HIGH-SCHOOL UNITS FOR ADMISSION TO MICHIGAN STATE COLLEGE

Subject	Teachers who left		Teachers who remained	
	Number presenting units	Per Cent	Number presenting units	Per cent
English	77	100.0	27	100.0
Language	43	55.8	15	55.9
Mathematics	77	100.0	27	100.0
Science	77	100.0	27	100.0
Social Science	77	100.0	27	100.0
Agriculture	51	66.2	20	74.1
Industrial Arts	19	24.7	9	33.3
Miscellaneous	53	68.8	21	77.8

The differences of percentage are not significant

[79] Goulden, Loc. Cit.

[80] See appendix, pages 165-166 for a copy of Plans of Admission to Michigan State College, which became effective in September, 1935.

sequences be made up of academic subjects, although many colleges accepted a major sequence in vocational subjects. The pattern of high-school subjects presented for admission to college, therefore, was set partly by tradition and partly by prescribed requirements of the college.

The pattern consisted of three units of English, another major sequence in either science or social science, and minor sequences in social science or science, and in foreign language or mathematics. There were many deviations from this pattern. However, Table I shows that 100 per cent of the individuals included in this study presented units in English, mathematics, science, and social science. Smaller percentages presented units in foreign languages, agriculture, industrial arts, and miscellaneous subjects such as commercial work and journalism.

The percentage of teachers who presented units in each of the subjects was determined, both for the teachers who left and for the teachers who remained. The significance of the difference of the percentages was determined for each subject. Although none of the differences of percentage was found to be statistically significant, it is of interest to note that a larger percentage of teachers who remained presented units in agriculture, industrial arts, and miscellaneous subjects such as commercial and journalism than did those who left.

The number and per cent of the two groups of teachers who

presented three or more units, in certain subjects, for admission to Michigan State College, is shown in Table II and in Figure 1. The purpose of the Table is to discover if any significant difference between the two groups of teachers will be revealed in so far as a high degree of specialization, or lack of it, at the high-school level is concerned. Significance of the difference of two percentages was determined for each of the subjects. None was significantly different. A greater percentage of the teachers who remained presented three or more units in social science and agriculture, while a greater percentage of those who left presented three or more units in science. These comparisons are illustrated in Figure 1.

TABLE II

NUMBER AND PER CENT OF TEACHERS OF VOCATIONAL AGRICULTURE WHO PRESENTED THREE OR MORE UNITS IN CERTAIN HIGH-SCHOOL SUBJECTS FOR ADMISSION TO MICHIGAN STATE COLLEGE

Subject	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
English	77	100.0	27	100.0
Language	1	1.3	0	
Mathematics	24	31.2	11	40.7
Science	46	60.0	12	44.4
Social Science	54	70.1	22	81.5
Agriculture	20	26.0	10	37.0
Industrial Arts	1	1.3	0	
Miscellaneous	8	10.4	1	3.7

The differences of percentage are not significant.

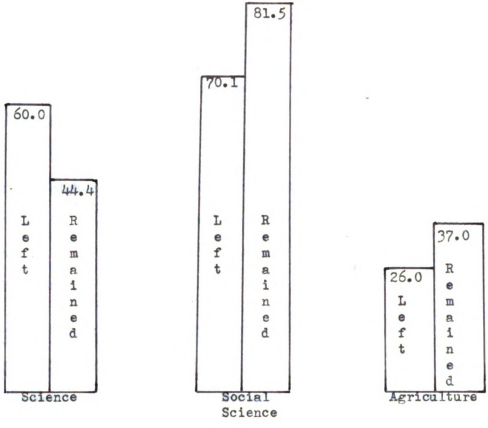

FIGURE 1

PERCENTAGE OF TEACHERS PRESENTING THREE OR MORE UNITS IN CERTAIN SUBJECTS FOR ADMISSION TO MICHIGAN STATE COLLEGE

While the above difference of percentage is not statistically significant, it indicates that there may be an association between evidence of interest in high-school science and a tendency for teachers to leave as compared with evidence of interest in social science and high-school agriculture and a tendency to remain in teaching. Of the teachers who presented major sequences in social sciences and high-school agriculture, a larger percentage have remained in teaching than of those who presented major sequences in science.

Original plans for the study included data regarding the size of the high-school class and the scholarship ranking of the teacher in his class.[81] It was found however, that data were not available for these items and therefore, they were omitted from the study.

FIRST INSTITUTIONS ENTERED BY TEACHERS OF VOCATIONAL AGRICULTURE AFTER GRADUATION FROM HIGH-SCHOOL

According to Table III, Michigan State College was the first institution entered by 73 per cent of those who left, and by 59.3 per cent of those who remained. The difference in number entering Michigan State College first is not statistically signifi-

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[81] See Copy of Form for Recording the Data from the Offices of the Registrar and from the Office of the Board of Examiners, Michigan State College. On page 175, in the appendix.

TABLE III

NUMBER OF CREDITS TRANSFERRED TO MICHIGAN STATE COLLEGE BY TEACHERS OF VOCATIONAL AGRICULTURE

Number of credits	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
0	57	73.0	16	59.3
1 - 17	2	2.6	0	
18 - 35	4	5.1	1	3.7
36 - 53	3	3.8	2	7.4
54 - 71	2	2.6	1	3.7
72 - 89	4	5.1	1	3.7
90 - 107	2	2.6	2	7.4
108 - 125	2	2.6	1	3.7
126 - 143	1	1.3	1	3.7
144 - 161	0		1	3.7
162 - 179	1	1.3	1	3.7
Totals	78	100.0	27	100.0

Difference in percentage of those entering Michigan State College first is not significant.

cant at the five per cent level. The chi-square value was 3.4, with one degree of freedom and, at the five per cent level, a value of 3.84 would be required for significance. The difference is great enough to warrant further study. Also it tends to indicate an association between evidence showing interest in teaching and a tendency to remain in the teaching of vocational agriculture. Those who remained in teaching vocational agriculture entered teachers' colleges first in greater numbers than those who later left teaching of vocational agriculture.

The majority of transfers were from teacher training institutions. Of those who left, 61.9 per cent of those who

transferred from other institutions, transferred from County Normal Schools or from State Teachers Colleges while, for those who remained, 72.7 per cent were transfers from such institutions.

COLLEGE MARKS

A study of the marks earned at college by teachers who left and by those who remained in teaching vocational agriculture was made on the basis of the ratio of marks to honor points. It was the plan at Michigan State College, at the time most of the teachers used in this study were enrolled in college, to assign points for various marks earned by students. Under the system in use at the time, an "A" was worth three points per credit, a "B" two points per credit, a "C" one point per credit, a "D" zero points per credit, and an "F" minus one point per credit. It is, therefore, possible to compute the grade-point ratio for the total college record or for any portion or combination of subjects on which a comparison is desired.

For this study a comparison was made of: (1) the all-college grade-point ratio; (2) the grade-point ratio of the technical agriculture subjects of the student's major; and (3) the grade-point ratio of the professional education courses, including the education and psychology courses, which were taken at the undergraduate level.

Table IV shows the number and per cent of teachers whose all college grade-point ratio fell within certain ranges. A

TABLE IV

UNDERGRADUATE GRADE-POINT RATIOS EARNED AT MICHIGAN STATE COLLEGE BY TEACHERS OF VOCATIONAL AGRICULTURE

Ratio	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
1.00 - 1.49	36	47.4	14	51.9
1.50 - 1.99	31	40.8	9	33.3
2.00 - 2.49	8	10.5	4	14.8
2.50 - 3.00	1	1.3		
Totals	76	100.0	27	100.0

The difference in number who had less than 2.00 and 2.00 or more is not significant.

slightly higher percentage of those who remained had a grade-point ratio of 1.00 to 1.49 than of those who left. Also, a somewhat higher percentage of those who remained had a grade-point ratio above 2.00. The difference in number above and below a grade-point ratio of 2.00 for those who left and those who remained was not significant.

The grade-point ratio in the technical agriculture major for the two groups is tabulated in Table V. It shows the number and percentage of teachers who left and those who remained whose grade-point ratio on the technical agriculture major fell within certain ranges. Of those who left, 52.6 per cent had a grade-point ratio of less than 2.00. It also shows that 47.4 per cent of those who left had a grade-point ratio of 2.00 or above, while 40.7 per cent of those who remained had a grade-point ratio of 2.00 or above.

TABLE V

UNDERGRADUATE GRADE-POINT RATIOS EARNED AT MICHIGAN STATE COLLEGE IN THE TECHNICAL AGRICULTURE MAJOR BY TEACHERS OF VOCATIONAL AGRICULTURE

Ratio	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
0.00 - 0.99	1	1.3	0	
1.00 - 1.99	40	51.3	16	59.3
2.00 - 2.99	33	42.3	11	40.7
3.00	4	5.1	0	
Totals	78	100.0	27	100.0
Per cent below 2.00		52.6		59.3
Per cent 2.00 or above		47.4		40.7

Difference of percentage below 2.00 is not significant.
Difference of percentage 2.00 or above is not significant.

In the same way, Table VI shows the number and percentage who had certain grade-point ratios in the under-graduate professional courses in education and psychology. The difference in the number who had above or below 2.00 is not significant. Of the teachers who left, 70.5 per cent had grade-point ratios below 2.00, while for those who remained, 63.0 per cent had grade-point ratios below 2.00. Of those who left 29.5 per cent had grade-point ratios of 2.00 or above, and 37.0 per cent of those who remained had grade-point ratios of 2.00 or above.

Many studies indicate that student teaching marks are predictive of teaching success. However, the writer failed to find any study in which a relation of student teaching marks and decision to leave or to remain in teaching was determined. In

TABLE VI

UNDERGRADUATE GRADE-POINT RATIOS EARNED AT MICHIGAN STATE COLLEGE IN PROFESSIONAL COURSES BY TEACHERS OF VOCATIONAL AGRICULTURE

Ratio	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
0.00 - 0.99	2	2.6	0	
1.00 - 1.99	53	67.9	17	63.0
2.00 - 2.99	22	28.2	10	37.0
3.00	1	1.3	0	
Totals	78	100.0	27	100.0
Per cent below 2.00		70.5		63.0
Per cent 2.00 or above		29.5		37.0

Difference of percentage below 2.00 is not significant.
Difference of percentage 2.00 or above is not significant.

this study the student teaching marks were tabulated for those who left and those who remained. Table VII shows the tabulation of these student teaching marks.

At Michigan State College, students majoring in agricultural education enrolled for two courses in student teaching. These two courses may have been taken concurrently or they may have been taken in two successive quarters of the school year. In some cases, students who transferred from other institutions received credit for one course in student teaching and were required to complete only one of the student teaching courses. In these cases only one student teaching mark was recorded as having been earned at Michigan State College. In this study, these single marks were recorded as double marks of the same

TABLE VII

MARKS EARNED IN STUDENT TEACHING AT MICHIGAN STATE COLLEGE BY TEACHERS OF VOCATIONAL AGRICULTURE

Marks	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
AA	22	28.2	6	23.1
AB	7	9.0	6	23.1
AC	3	3.9	0	
BB	32	41.0	11	42.3
BC	4	5.1	3	11.5
CC	10	12.8	0	

The difference between number who had AA and AB and those who had lower marks is not significant.

value. For example, a mark of "C" was tabulated here as "CC". There was no significant difference between the groups in the number who had marks of "AA" and "AB" and those who had lower marks in student teaching.

It is interesting to note that 46.2 per cent of those who remained had student teaching marks of "AA" or "AB" as compared with corresponding marks for 37.2 per cent of those who left. Also, 17.9 per cent of those who left received marks in student teaching of "BC" or "CC" as compared with 11.5 per cent of those who remained. Another point of interest is that 12.8 per cent of those who left received "CC", whereas none of those who remained received so low a mark.

Further studies might show that teachers who leave rank higher in the marks in their technical agriculture majors than

those who remain, and they rank lower in marks in professional subjects than those who remain. Each of these rankings - in courses in the technical agriculture major, in professional courses, and in student teaching, all point in the same direction; namely, that there seems to be an association between leaving teaching of vocational agriculture and evidence of greater interest in technical agriculture than in teaching. There seems to be an association between remaining in teaching vocational agriculture and higher marks in professional courses.

SCORES ON TESTS TAKEN DURING FRESHMAN WEEK

As early as 1929, Michigan State College had an organized plan of testing students at the time they first enrolled. However, the records were not compiled and filed for future use prior to 1934. As a result records were not available for many of the teachers included in this study.[82]

The available records were compiled so that comparisons could be made between the two groups of teachers. Table VIII and Figure 2 shows the number and per cent of teachers and their decile rank on the American Council on Education Psychological Test for College Freshmen given during freshman week. The per-

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[82] Interview with Lloyd C. Emmons, Dean of the School of Science and Arts, Michigan State College, August, 1950.

TABLE VIII

DECILE RANK OF TEACHERS OF VOCATIONAL AGRICULTURE ON THE AMERICAN COUNCIL ON EDUCATION PSYCHOLOGICAL TEST FOR COLLEGE FRESHMEN GIVEN AT THE TIME OF ADMISSION TO MICHIGAN STATE COLLEGE

Decile rank	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
10	6	12.8	2	11.1
9	2	4.3	2	11.1
8	4	8.5	0	
7	4	8.5	3	16.7
6	3	6.4	1	5.5
5	5	10.6	2	11.1
4	7	14.9	0	
3	5	10.6	2	11.1
2	5	10.6	3	16.7
1	6	12.8	3	16.7
Totals	47	100.0	18	100.0
In deciles 1 - 3	16	34.0	8	44.5

Difference of percentages in deciles 1 - 3 not significant.

centage of those who ranked in the first three deciles was 34.0 and 44.5 for those who left and those who remained, respectively. For those who left, 40.4 per cent ranked in deciles four to seven and 33.3 per cent of those who remained ranked in these deciles. Of those who left, 25.6 per cent ranked in deciles eight to ten, and 22.2 per cent of those who remained ranked in these three deciles. None of the differences of percentage was significant.

The second test given new students was the Cooperative

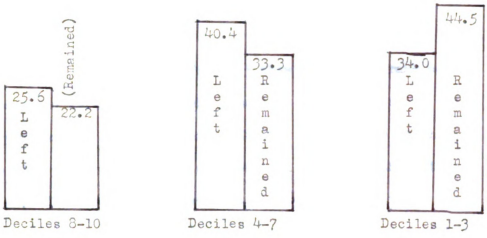

FIGURE 2

PERCENTAGE OF TEACHERS RANKING IN CERTAIN DECILE GROUPS ON THE AMERICAN COUNCIL ON EDUCATION PSYCHOLOGICAL TEST

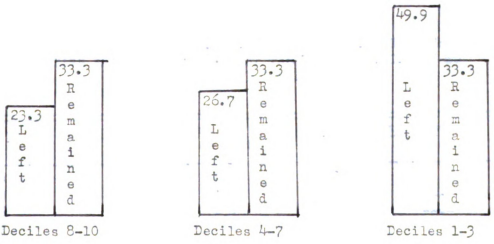

FIGURE 3

PERCENTAGE OF TEACHERS RANKING IN CERTAIN DECILE GROUPS ON THE COOPERATIVE ENGLISH TEST

English Test. Table IX and Figure 3 show the decile rank of the teachers who left and those who remained. The Table shows that 49.9 per cent of those who left ranked in deciles one to three, while 33.3 per cent of those who remained ranked in these three deciles. The Table also shows that 26.7 per cent of those who left ranked in deciles four to seven while 33.3 per cent of those who remained ranked in these deciles. Ranking in deciles eight to ten were 23.4 per cent of those who left and 33.3 per cent of those who remained.

While the difference in percentage in any specific range of decile groups was found not to be statistically significant, it is interesting to note that a smaller percentage of those who

TABLE IX

DECILE RANK OF TEACHERS OF VOCATIONAL AGRICULTURE ON THE COOPERATIVE ENGLISH TEST GIVEN AT THE TIME OF ADMISSION TO MICHIGAN STATE COLLEGE

Decile	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
10	0	.	1	11.1
9	3	10.0	1	11.1
8	4	13.4	1	11.1
7	2	6.7	0	
6	1	3.3	1	11.1
5	1	3.3	0	
4	4	13.4	2	22.2
3	3	10.0	1	11.1
2	5	16.7	0	
1	7	23.2	2	22.2
Totals	30	100.0	9	99.9
Per cent in Deciles 1-3,		49.9		33.3

Difference of percentages is not significant.

left were in the first three deciles on the psychological test, and that a slightly higher percentage of those who left were in the upper three deciles on the English test. On the English test as a whole, however, the teachers who remained ranked somewhat higher since there was a higher percentage in the upper three deciles and a lower percentage in lower deciles.

COLLEGE ACTIVITIES

There was a significant difference in the percentage of teachers who belonged to social fraternities when the teachers who left were compared with those who remained in teaching of vocational agriculture. Table X shows that 42.3 per cent of those who left, and 18.5 per cent of those who remained, belonged to social fraternities while enrolled at Michigan State College. In relation to social fraternities, Anderson found no association between membership in social fraternities and length of teaching experience.[83]

Total memberships in college clubs and other professional and social organizations while in college are shown in Table XI. This Table shows that the teachers who left belonged to 2.3 organizations per person and that those who remained belonged to 2.1 organizations per person.

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[83] Anderson, op. cit., p. 36.

TABLE X

MEMBERSHIP IN SOCIAL FRATERNITIES BY TEACHERS OF VOCATIONAL AGRICULTURE WHILE ENROLLED AT MICHIGAN STATE COLLEGE

	Teachers who left	Teachers who remained
Number of teachers belonging to social fraternities	33	5
Per cent of teachers belonging to social fraternities	42.3	18.5

The difference of percentage is significant.

TABLE XI

TOTAL MEMBERSHIPS IN COLLEGE ORGANIZATIONS HELD BY TEACHERS OF VOCATIONAL AGRICULTURE WHILE ENROLLED AT MICHIGAN STATE COLLEGE

	Teachers who left	Teachers who remained
Total number of memberships	177	56
Average number of memberships per person	2.3	2.1

The number of teachers in the two groups who held membership in college clubs was also determined. The data are shown in Table XII. It was found that 87.2 per cent of the teachers who left held membership in some club or organization and 88.8 per cent of those who remained held membership in a club or organization.

Membership in college clubs and organizations showed no significant differences. The teachers who left held slightly more memberships in clubs, but as large a percentage of those who remained had membership in at least one organization as of those who left.

TABLE XII

INDIVIDUAL MEMBERSHIP IN COLLEGE ORGANIZATIONS HELD BY TEACHERS OF VOCATIONAL AGRICULTURE WHILE ENROLLED AT MICHIGAN STATE COLLEGE

	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
Number and per cent belonging to some organization	68	87.2	24	88.8
Number and per cent who were non-members	10	12.8	3	11.2

Chi-square test shows difference of number is not significant.

Of the teachers who left, six, or 7.7 per cent belonged to honorary fraternities, while four, or 14.8 per cent of those who remained, belonged to honorary fraternities. While these differences are not statistically significant, they tend to bear out the findings of Andersen in Pennsylvania who found that membership in honorary fraternities is somewhat predictive of length of service in teaching vocational agriculture.[84]

AGES AT VARIOUS POINTS IN THE PRE-SERVICE CAREER OF TEACHERS WHO LEFT AND THOSE WHO REMAINED

Anderson concluded that, "those who make early and settled decisions concerning teacher preparation ... are most likely to become successful teachers."[85] It will be recalled that Anderson assumed length of service as a measure of success.

In this study it was desired to determine the difference in ages at various levels in their pre-service careers of teachers who left and those who remained. Data were therefore tabulated showing ages of the two groups of teachers at the time of graduation from high school, at the time of matriculation at Michigan State College, at the time of graduation from Michigan

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[84]Andersen, op. cit., p. 36.

[85]Anderson, op. cit., p. 52.

State College, and at the time of entering the teaching of vocational agriculture.

Table XIII indicates that there is no significant difference between the mean age at the time of graduation from high-school of those who left and those who remained. The mean age of those who left was 18.0 years and the mean age of those who remained was 17.9 years.

There was some delay between graduation from high-school and entrance into college at Michigan State College. Table XIV shows that the average age at the time of matriculation at Michigan State College for those who left was 20.5 years and for those who remained the mean age was 22.0 years. The difference

TABLE XIII

AGE OF TEACHERS OF VOCATIONAL AGRICULTURE AT THE TIME OF GRADUATION FROM HIGH-SCHOOL

Age	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
16	2	3.5	1	6.2
17	12	20.7	5	31.3
18	32	55.1	6	37.5
19	9	15.5	3	18.8
20	2	3.5	1	6.2
21	1	1.7	0	
Totals	58	100.0	16	100.0
Mean age		18.0		17.9

Difference of means not significant.

TABLE XIV

AGE OF TEACHERS OF VOCATIONAL AGRICULTURE AT THE TIME OF MATRICULATION AT MICHIGAN STATE COLLEGE

Age	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
16 - 20	45	59.2	14	51.9
21 - 25	27	35.5	10	37.0
26 - 30	3	4.0	2	7.4
31 - 35	1	1.3	0	
36 - over	0		1	3.7
Totals	76	100.0	27	100.0
Mean age		20.5		22.0

Difference of means significant

of the mean ages at the time of matriculation at Michigan State College is statistically significant. It should be recalled that a greater proportion of the teachers who remained were transfer students from other institutions to Michigan State College. This probably accounts for some of the difference in age at the time of matriculation as compared with the difference at the time of graduation from high-school.

Table XV shows the age of teachers at the time of graduation from Michigan State College. The average age for those who left was 24.4 years and for those who remained, 26.9 years. The difference of these means is significant at the five per cent level.

The age of teachers at the time of beginning teaching of

TABLE XV

AGE OF TEACHERS OF VOCATIONAL AGRICULTURE AT THE TIME OF GRADUATION FROM MICHIGAN STATE COLLEGE

Age	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
21 - 25	60	80.0	18	66.7
26 - 30	12	16.0	2	7.4
31 - 35	3	4.0	4	14.8
36 - 40	0		1	3.7
41 - over			2	7.4
Totals	75	100.0	27	100.0
Mean age		24.4		26.9

Difference of the means is significant.

vocational agriculture is shown in Table XVI. According to this Table, the age of teachers who left averaged 25.4 years at the time they began teaching vocational agriculture. The age at the same time of those who remained in teaching was 27.3 years. This difference of means falls just short of being significant at the five per cent level.

A summary of the mean ages of teachers at different points in their progress into teaching vocational agriculture is shown in Table XVII.

Only two of the differences of means in Table XVII were found to be significant. These are the differences in mean ages at the time of matriculation at Michigan State College and at the

TABLE XVI

AGE OF TEACHERS AT THE TIME THEY BEGAN TEACHING VOCATIONAL AGRICULTURE

Age	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
21 - 25	49	63.6	17	68.0
26 - 30	22	28.6	2	8.0
31 - 35	3	3.9	2	8.0
36 - 40	2	2.6	1	4.0
41 - over	1	1.3	3	12.0
Totals	77	100.0	25	100.0
Mean age		25.4		27.3

Difference of means not significant.

TABLE XVII

SUMMARY OF MEAN AGES OF TEACHERS OF VOCATIONAL AGRICULTURE AT SELECTED POINTS IN THEIR PROGRESS TOWARD TEACHING OF VOCATIONAL AGRICULTURE

Selected points in pre-service career	Teachers who left Mean age	Teachers who remained Mean age
Age at H. S. graduation	18.0	17.9
Age at matriculation, M.S.C.	20.5	22.0
Age at Graduation, M.S.C.	24.4	26.9
Age at beginning teaching	25.4	27.3

time of graduation from the college. It is of interest to note that, except for the age at the time of graduation from high-school, the mean age of those who remained was greater than the mean age at the same period for those who left. It is possible that those who remained were more mature and that they made wiser choices of a vocation than those who left. The group who entered training at the earlier age may not have been so "settled;" therefore, followed the pattern of the teachers of Anderson's study and remained in teaching a shorter length of time.[86] On the other hand, it is possible that the older men had more obligations which prevented them from changing occupations as readily as the younger age group. In either case, there seems to be an association between the age of teachers at certain points in their pre-service careers and their tendency to remain in or to leave teaching of vocational agriculture.

This chapter has presented the data regarding the teachers who left and those who remained for the time they were enrolled as under-graduates at Michigan State College, the high-school units they presented for admission to college, and their ages at the time of beginning teaching of vocational agriculture.

Comparisons have been made between those who left and those who remained and the differences between the two groups have been presented. Results of tests for significance of the difference of the means or of percentage have been recorded for each of the items studied.

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[86] Anderson, op. cit., p. 52

CHAPTER V

RECORDS AND ACTIVITIES OF TEACHERS AFTER BEGINNING THE TEACHING OF VOCATIONAL AGRICULTURE

Chapter four made comparisons between the activities and records of teachers who left and those who remained during the time they were enrolled at Michigan State College. Chapter five will make comparisons between the activities and records of the two groups after graduation from college. Activities and records are presented here for the period after entrance into teaching of vocational agriculture. No attempt is made to trace the occupational or professional history of those who entered other occupations or professions after graduation from Michigan State College and who later entered the teaching of vocational agriculture.

PROFESSIONAL ACTIVITIES AFTER GRADUATION FROM MICHIGAN STATE COLLEGE

1. Membership in Professional and Farm Organizations

Teachers were asked to respond to questions regarding membership in the Michigan Education Association, the Michigan Association of Teachers of Vocational Agriculture, The Farm Bureau, and the Grange. The organizations were selected because they represent two widespread professional organizations to which teachers of vocational agriculture may belong and two of the widespread farm organizations to which persons interested in agriculture may belong. It should be noted that membership

in the Michigan Association of Teachers of Vocational Agriculture also includes membership in the Michigan Vocational Association and in the American Vocational Association.

The teachers were asked if they had ever belonged to these organizations rather than if they were members while teaching vocational agriculture. Membership was recorded here for periods after beginning teaching of vocational agriculture, and it included periods after leaving the teaching of vocational agriculture. The tabulations do not include memberships which were discontinued before beginning teaching of vocational agriculture. Memberships were considered for the period after beginning teaching vocational agriculture and up to June 30, 1949.

The percentage of each group belonging to each organization after beginning to teach vocational agriculture is shown in Table XVIII and in Figure 4. The difference of percentage of teachers who left and teachers who remained belonging to any organization is not significant, but it is of interest to note that the teachers who remained belonged to the professional organizations in larger numbers than those who left. For example, 74.3 per cent of those who left belonged to the Michigan Education Association, while 82.6 per cent of those who remained belonged to this organization. Of the teachers who left, 72.2 per cent belonged to the Michigan Association of Teachers of Vocational Agriculture, while 92.0 per cent of those who remained belonged to this organization.

TABLE XVIII

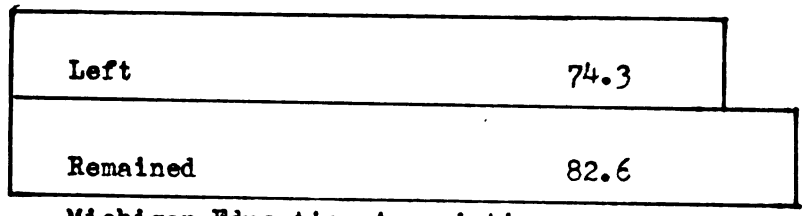
MEMBERSHIP OF TEACHERS OF VOCATIONAL AGRICULTURE IN PROFESSIONAL AND FARM ORGANIZATIONS

Organization	Teachers who left		Teachers who remained	
	Number responding	Per cent members	Number responding	Per cent members
Michigan Education Association	74	74.3	23	82.6
Michigan Association of Teachers of Vocational Agriculture	72	72.2	25	92.0
Farm Bureau	51	43.1	25	40.0
Grange	63	28.6	25	40.0

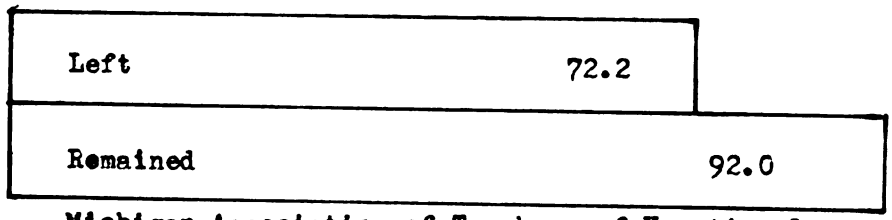
No difference of percentage is significant.

Membership in the Grange was held by 28.6 per cent of those who left and by 40.0 per cent of those who remained. Of the teachers who left, 43.1 per cent belonged to the Farm Bureau, while 40.0 per cent of those who remained belonged to this organization. A somewhat greater percentage of the teachers who remained belonged to the professional organizations. However, further study will be necessary to determine the significance of differences which may exist.

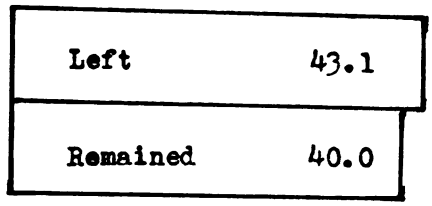
Individual teachers have reported that they felt under pressure to join one of these organizations. Whatever pressures may have been exerted in this regard, are likely to have been



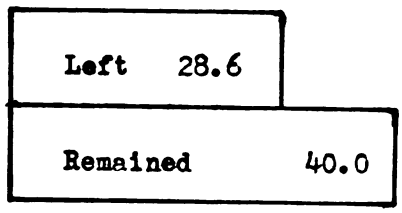
Michigan Education Association



Michigan Association of Teachers of Vocational Agriculture



Farm Bureau



Grange

FIGURE 4

PERCENTAGE OF TEACHERS BELONGING TO PROFESSIONAL AND FARM ORGANIZATIONS

exerted equally in both groups of teachers so that they would not affect the relationship between the two groups of teachers.

Teachers were also asked if they had held offices or if they had been members of standing committees in any of these organizations, what offices or what committee memberships they had held, and when they had held such positions.[87] Many of the questionnaires were left blank for these items. Others inserted such comments as: "I don't remember," too many to list," or "don't remember the years." It was therefore necessary to omit these items from the study as the returns were not adequate to justify compilation.

2. Credits Earned at Michigan State College Since Graduation With the Bachelor of Science Degree

Table XIX and Figure 5 show a comparison between the teachers who left and those who remained regarding the number of credits in technical agriculture earned at Michigan State College since graduation. Of the teachers who left, 38.6 per cent had earned some credits beyond the Bachelor's Degree while 88.9 per cent of those who remained had earned credits beyond the Bachelors Degree. The difference of percentages is significant.

A comparison was also made to determine the difference

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[87] See Copy of Questionnaire which was sent to Teachers of Vocational Agriculture, pages 167 to 173 in the Appendix.

TABLE XIX

NUMBER OF TEACHERS OF VOCATIONAL AGRICULTURE WHO EARNED CREDITS IN TECHNICAL AGRICULTURE SUBJECTS AT MICHIGAN STATE COLLEGE AFTER RECEIVING THE BACHELOR'S DEGREE

Credits	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
0	48	61.4	3	11.1
1 - 5	13	16.7	5	18.5
6 - 10	7	9.0	3	11.1
11 - 15	2	2.6	3	11.1
16 - 20	2	2.6	6	22.3
21 - 25	1	1.3	2	7.4
26 - 30	0		2	7.4
31 - 35	1	1.3	1	3.7
36 - over	4	5.1	2	7.4
Totals	78	100.0	27	100.0

Difference of percentage of those who had one or more credits is significant.

Difference in number who had eleven or more credits is significant.

in the number who had ten or less credits and those who had eleven credits or more in the two groups. A greater number of the teachers who remained had eleven credits or more.

A similar comparison for professional credits, beyond the Bachelor's Degree, earned at Michigan State College is shown in Table XX. The percentage of teachers who remained who had one or more professional credits was 88.9, and for those who left the percentage was 50.0. The difference of percentages is significant. There was a significantly larger proportion of those who

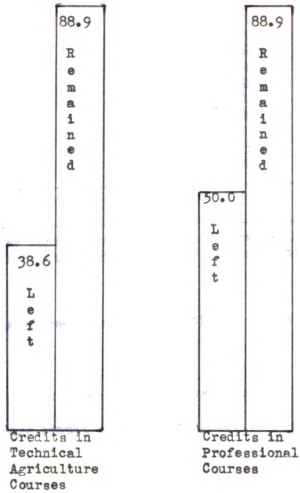

FIGURE 5

PERCENTAGE OF TEACHERS HAVING CREDITS AT MICHIGAN STATE COLLEGE IN TECHNICAL AGRICULTURE AND IN PROFESSIONAL COURSES BEYOND THE BACHELOR'S DEGREE

TABLE XX

NUMBER OF TEACHERS OF VOCATIONAL AGRICULTURE WHO EARNED CREDITS IN PROFESSIONAL COURSES SINCE RECEIVING THE BACHELOR'S DEGREE

Credits	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
0	39	50.0	3	11.1
1 - 5	29	37.2	5	18.5
6 - 10	4	5.1	6	22.3
11 - 15	4	5.1	4	14.8
16 - 20	1	1.3	2	7.4
21 - 25	0		1	3.7
26 - 30	0		0	
31 - 35	0		1	3.7
36 - 40	0		3	11.1
41 - over	1	1.3	2	7.4
Totals	78	100.0	27	100.0

Difference of per cent having one or more credits is significant.
Difference of per cent having eleven or more credits is significant.

remained who had eleven or more professional credits than of those who left.

3. High-school teaching situation

The average annual salary of teachers who left and of those who remained is shown in Table XXI and in Figure 6. Only one teacher who remained began teaching in the school year 1936-37 and only one of those who left did so during 1947-48; therefore, the years 1936-37, 1947-48 and 1948-49 have been omitted from Table XXI. The significance of the difference of

TABLE XXI

AVERAGE ANNUAL SALARY OF TEACHERS OF VOCATIONAL AGRICULTURE, BY YEARS

Year	Teachers who left			Teachers who remained		
	Av. Salary	Std. Error of mean	No.	Av. Salary	Std. Error of mean	No.
1937-38	1865.00	19.57	20	1778.57	48.29	7
1938-39	1860.26	13.47	38	1830.00	35.89	9
1939-40	1892.11	18.40	57	1893.75	32.91	16
1940-41	1896.15	12.88	62	19.6.67	23.87	27
1941-42	2024.51	19.46	48	1994.44	29.91	27
1942-43	2150.00	34.67	32	2138.46	34.80	25
1943-44	2530.00	46.17	26	2454.17	51.50	24
1944-45	2718.42	79.41	19	2754.35	56.39	23
1945-46	3111.54	66.29	13	3063.64	73.82	22
1946-47	3216.67	150.67	5	3020.00	69.30	26

Difference of means is not significant for any year.

the means was computed for each year and none was found to be significant.

On page 12, it was explained that a teacher-year is one teacher teaching one year, and that the total teacher-years can be computed by totaling all of the years taught by all of the teachers in any group. It was found that of the teachers who left, 63 or 18.9 per cent of the teacher-years were spent in programs with less than 60 per cent of the time on vocational agriculture. For the teachers who remained, 32 or 12.3 per cent of the teacher-years were spent on programs in which less than 60 per cent of the time was given to programs of vocational agriculture. The difference of the two percentages is significant.

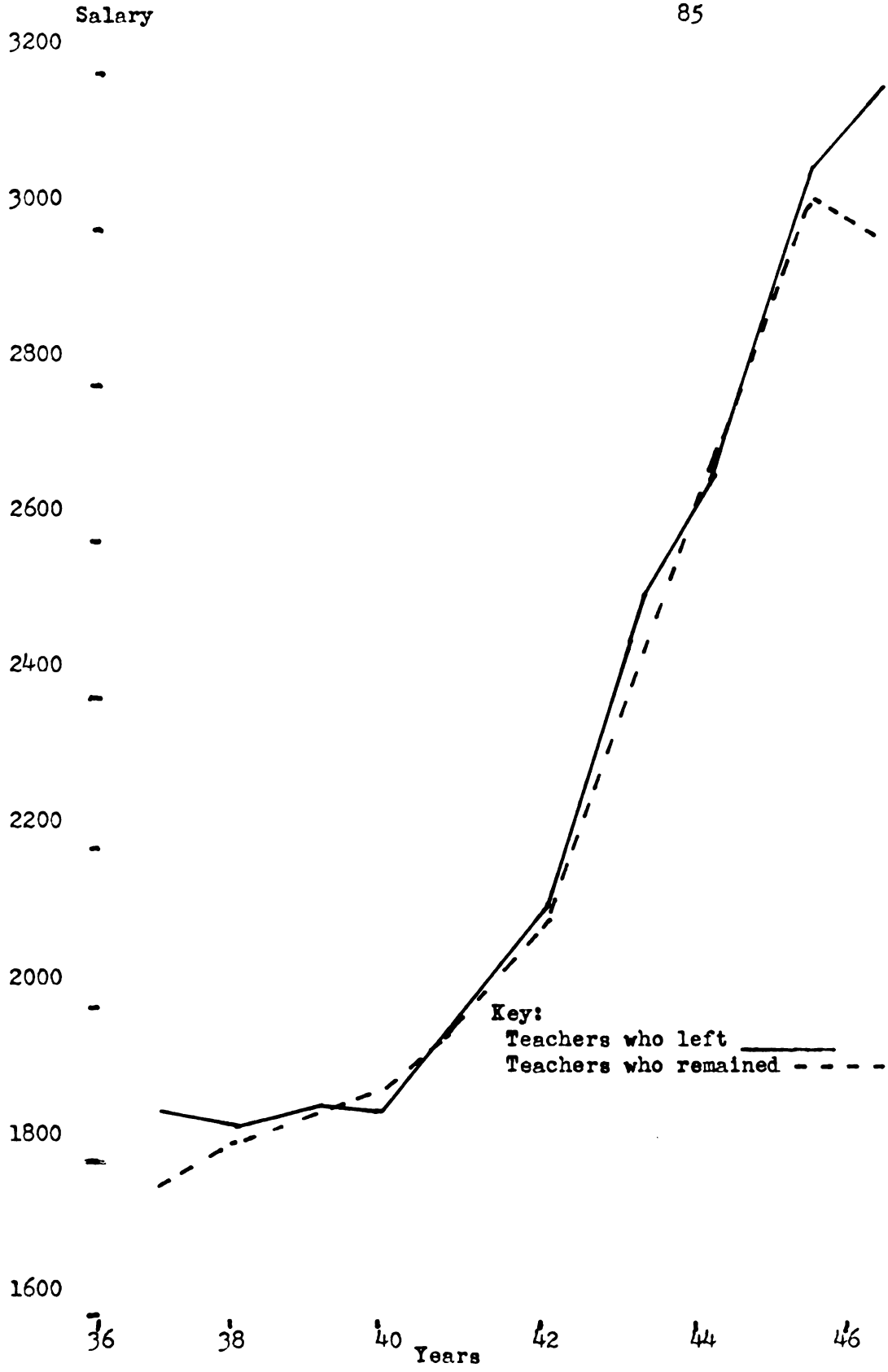

FIGURE 6

SALARIES OF TEACHERS OF VOCATIONAL AGRICULTURE BY YEARS

This difference indicates that there was a significantly greater amount of time devoted to vocational agriculture in the programs of teachers who remained than of those who left. It appears that there is an association between the percentage of time devoted to vocational agriculture and the tendency of teachers to remain in the profession of teaching vocational agriculture.

Enrollment in all-day classes in vocational agriculture taught by the teachers included in this study, may have been a factor in their decision to remain in or to leave the field of teaching vocational agriculture. The data were analyzed for the purpose of determining if an association existed between low enrollment in classes taught by teachers of vocational agriculture and the tendency to leave the profession.

Table XXII shows the various sizes of enrollments, by years for teachers who left. Similarly, enrollments in classes taught by teachers who remained are shown in Table XXIII. A graph of the mean enrollment by years for each group is shown in Figure 7. The mean difference in enrollment by years in classes taught by those who left and those who remained is very slight and is not statistically significant.

The data were further analyzed to determine the total teacher-years in which enrollment in all-day classes was below thirty pupils. These data are shown in Table XXIV. The data indicate that, for the teachers who left, 44.5 per cent of teacher-

TABLE XXII

NUMBER OF TEACHERS WHO REMAINED WHO HAD ENROLLMENTS IN ALL-DAY CLASSES BY YEARS AS INDICATED

Enrollment	36-37	37-38	38-39	39-40	40-41	41-42	42-43	43-44	44-45	45-46	46-47	47-48	48-49
80 - 89										1		1	
70 - 79										1	3		
60 - 69										1	1	5	3
50 - 59				1	2		1		6	3	5	4	8
40 - 49		1		3	5	4	2	6	1	3	3	6	7
30 - 39	1	2	6	5	7	11	10	9	10	9	8	7	6
20 - 29		4	4	5	10	9	11	9	3	4	5	2	2
10 - 19				2	3	3	2		3				
Totals	1	7	10	16	27	27	26	24	23	22	25	25	26
Mean	35.0	30.7	31.0	32.5	32.4	30.9	30.8	33.7	36.7	42.7	44.2	47.8	46.5
St'd. Deviation of mean		2.9	1.6	2.8	1.5	1.7	1.8	1.6	2.7	3.5	2.7	2.5	2.3

TABLE XXIII

NUMBER OF TEACHERS WHO LEFT WHO HAD ENROLLMENTS IN ALL-DAY CLASSES BY YEARS AS INDICATED

Enrollment	36-37	37-38	38-39	39-40	40-41	41-42	42-43	43-44	44-45	45-46	46-47	47-48	48-49
80 - 89										1			
70 - 79					1			1	2				
60 - 69						1		1	1				
50 - 59			1	2	1		1	2		3	1		
40 - 49	2	3	5	6	8	4	5	4	2	3			
30 - 39	4	10	12	21	19	21	16	7	7	3	3	1	
20 - 29	2	6	13	21	28	15	9	8	7	1	1		
10 - 19	3	1	8	6	6	6	1	1		1	1		
0 - 9				1		1							
Totals	11	20	39	57	63	48	32	24	19	12	6	1	
Mean	26.4	32.5	29.5	30.3	31.0	29.7	33.5	36.6	38.2	44.2	30.7		
St'd. Deviation of Means	3.4	1.8	1.6	1.3	1.3	1.5	1.4	2.9	3.8	3.6	5.3		

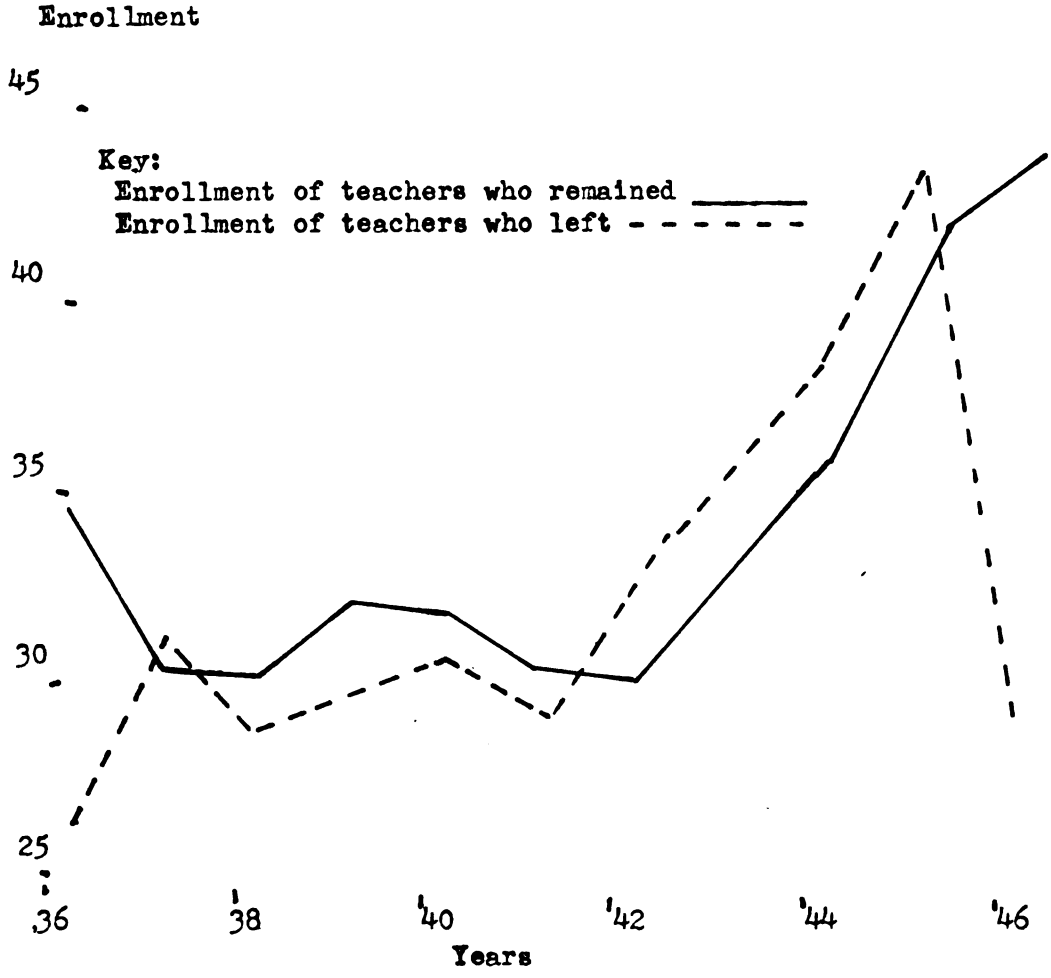

FIGURE 7

MEAN ENROLLMENT IN ALL-DAY CLASSES OF VOCATIONAL AGRICULTURE BY YEARS

TABLE XXIV

NUMBER AND PER CENT OF TEACHER-YEARS IN WHICH ENROLLMENT IN ALL-DAY CLASSES WAS BELOW THIRTY PUPILS

	Teachers who left	Teachers who remained
Number of teacher-years in which enrollment was below thirty pupils	153	83
Per cent of teacher-years with enrollments below thirty pupils	44.5	31.3
Total teacher-years	332	259

Difference of percentage is significant.

years were spent in programs with fewer than thirty pupils. For the teachers who remained, 31.3 per cent of teacher-years were spent in programs with fewer than thirty pupils. The difference of these percentages is significant, indicating that there is an association between the tendency of teachers to leave and enrollments of less than thirty pupils in all-day classes.

A further analysis of these data was made to determine the significance of the difference of percentage of teacher-years spent by teachers who left and by those who remained in programs with more than fifty pupils. Figure 8 shows that 5.8 per cent of teacher-years were spent by teachers who left in

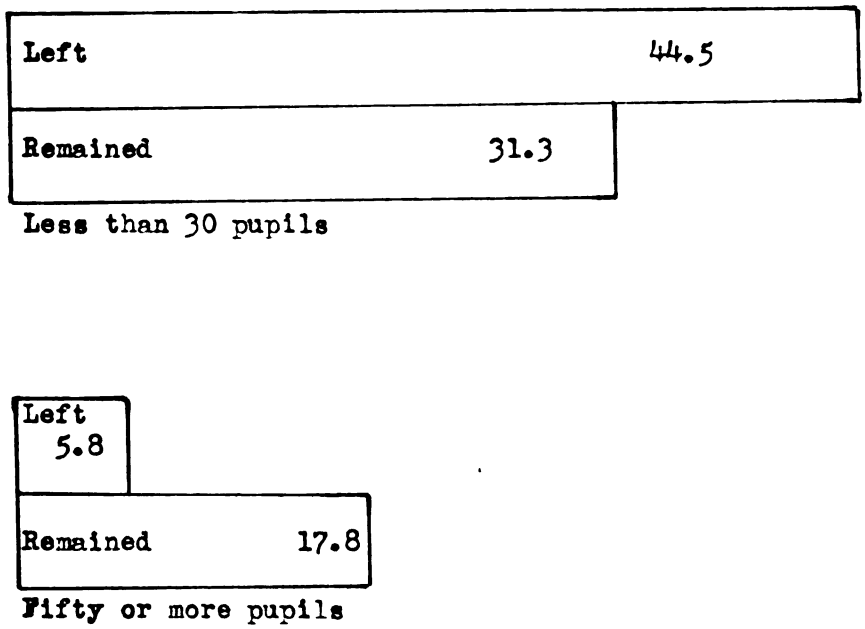

FIGURE 8

PERCENTAGE OF TEACHER-YEARS SPENT IN PROGRAMS OF LESS THAN THIRTY PUPILS AND OF MORE THAN FIFTY PUPILS

programs with fifty pupils or more. Of the teachers who remained 17.8 per cent of teacher-years were spent in programs with fifty or more pupils. The difference of these percentages is significant. For the teachers in this study, a greater proportion of the teacher-years of the teachers who remained were spent in programs with more than fifty pupils than of those who left.

The number of teachers who had one, two, three, or four classes in vocational agriculture is shown in Table XXV. The percentage represented by programs of one or two classes was determined for the two groups of teachers.

The per cent of programs taught by teachers who left which had less than three all-day classes was 78.1, while a similar percentage for teachers who remained was 70.0. This difference of percentage is significant.

Since the school year 1917-18, when reimbursement to schools for programs of vocational agriculture under the Smith-Hughes Act was first paid in Michigan,[88] it has been customary to prorate the time of the teacher of vocational agriculture be-

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[88] State Board of Control for Vocational Education, First Came the Farms: History of Vocational Agricultural Education in Michigan, (State Board of Control for Vocational Education, Bulletin 289, Lansing, Michigan: State Board of Control for Vocational Education, 1944), p. 15.

TABLE XXV

NUMBER OF TEACHERS AND NUMBER OF ALL-DAY CLASSES TAUGHT IN THE PROGRAM OF VOCATIONAL AGRICULTURE, BY YEARS

Year	Teachers who left — Number of classes					Teachers who remained — Number of classes					
	1	2	3	4	total	1	2	3	4	5	total
1936-37		2	6	3	11			1			1
1937-38		17	3		20		3	4			7
1938-39		30	8		38		8	1			9
1939-40	1	43	13		57		15	1			16
1940-41	4	49	9		62	3	20	4			27
1941-42	7	35	6		48	1	23	3			27
1942-43	1	27	4		32		22	2	1		25
1943-44		18	5	3	26		18	6			24
1944-45		13	3	3	19	2	14	5	2		23
1945-46		7	3	3	13		15	5	2		22
1946-47		4	1		5		14	9	3		26
1947-48		1			1		10	13	3		26
1948-49							13	11	2	1	27
Totals	13	246	61	12	332	6	175	65	13	1	260
Per cent below three classes					78.1						70.0

Difference of percentage is significant.

tween programs of vocational agriculture and some other high-school program of a non-vocational nature such as the teaching of science or industrial arts.

It was, therefore, desirable to determine the number of non-vocational classes taught by teachers who left as compared with teachers who remained. Table XXVI shows the number of teachers who had one, two, three, four, or five non-vocational classes by years. The significance of the difference of means was computed for each of the years, and none was found to be significant.

TABLE XXVI

NUMBER OF TEACHERS OF VOCATIONAL AGRICULTURE WHO TAUGHT NON-VOCATIONAL CLASSES AND NUMBER OF NON-VOCATIONAL CLASSES TAUGHT

Year	Teachers who left: Number of teachers having 0 classes	1	2	3	4	5	Av. No. of classes per teacher	St'd. Error of mean	Teachers who remained: Number of teachers having 0 classes	1	2	3	4	5	6	Av. Cl. per teacher	St'd. error of mean
36-37		9	2				1.2		1								
37-38		2	15	3			2.1	.184		3	4						
38-39	1	12	19	6			1.8	.116	1	2	6					1.6	.221
39-40	3	14	32	8			1.8	.197		8	6	2				1.6	.180
40-41	3	10	33	16			2.1	.119		9	7	8	2	1		2.2	.260
41-42	6	11	28	3			1.6	.121		13	11	3				1.6	.132
42-43	2	2	12	13	3		2.3	.182		1	11	13				2.6	.176
43-44	5	7	11	3			1.4	.188		10	10	3				1.8	.170
44-45	4	3	6	6			1.7	.263	2	5	10	6				1.8	.200
45-46	5	3	4	1			1.1	.288	3	9	9	1				1.4	.168
46-47	2		1	2			1.3	.613	6	11	7	2				1.3	.190
47-48	1								10	5	9	2				1.1	.202
48-49									15	5	6	1				.74	.182
Totals	32	73	163	61	3				38	81	96	41	2	1			

Difference of means is not significant for any year.

Table XXVII shows the number of teacher-years spent in programs of less than two non-vocational classes by the two groups of teachers. The Table indicates that for the teachers who left, 31.6 per cent of the teacher-years were spent in programs with less than two non-vocational classes. For the teachers who remained, 45.8 per cent of the teacher-years were spent in programs with less than two non-vocational classes. The difference of these percentages is significant.

A comparison of Tables XXVI and XXVII shows that while

TABLE XXVII

NUMBER OF TEACHER-YEARS WITH LESS THAN TWO NON-VOCATIONAL CLASSES

	Teachers who left	Teachers who remained
Total teacher-years	332	260
Number of teacher-years with less than two non-vocational classes	105	119
Per cent with less than two non-vocational classes	31.6	45.8

The difference of percentage is significant.

there is no significant difference between the two groups of teachers in mean number of non-vocational classes in any year, when the teacher-years are totaled and the proportion of teacher-years which were spent in programs with less than two non-vocational classes are compared for the two groups, the teachers who left are found to have had a significantly larger number of non-vocational classes.

Figure 9 provides a graphic comparison of data from Tables XXVI and XXVII. It compares the per cent of teacher-years of those who left and those who remained, which were spent in programs of less than three vocational classes and in programs of less than two non-vocational classes. These data support the data of pages 84-86, where it was found that the teachers who left spent a significantly smaller percentage of their time on vocational agriculture than did those who remained.

Table XXVIII and Figure 10 show the number of teachers and the teacher-years represented by members of the two groups who had various numbers of young-farmer classes. For example, note that for the teachers who left, 65 teachers, representing 260 teacher-years, had no young farmer classes; and for the teachers who remained, fifteen teachers, representing 137 teacher-years, had no young-farmer classes.

The per cent of teacher-years in which there were no young-farmer classes is 78.3 for those who left and 52.7 for

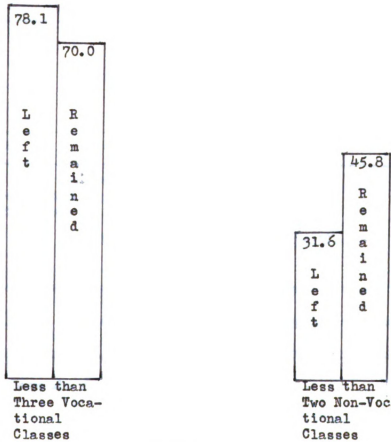


FIGURE 9

COMPARISON OF PER CENT OF TEACHER-YEARS SPENT IN PROGRAMS OF LESS THAN THREE VOCATIONAL CLASSES AND IN PROGRAMS OF LESS THAN TWO NON-VOCATIONAL CLASSES BY TEACHERS WHO LEFT AND THOSE WHO REMAINED

TABLE XXVIII

NUMBER OF YOUNG-FARMER CLASSES AND NUMBER OF TEACHERS AND TEACHER-YEARS INVOLVED

Number of classes	Teachers who left		Teachers who remained	
	Number of teachers	Number of teacher-years	Number of teachers	Number of teacher-years
0	65	260	15	137
1	6	28	6	63
2	3	15	3	32
3	3	21	2	19
4	1	8	1	9
5				
Totals	78	332	27	260
Per cent of teacher-years with zero number of classes		78.3		52.7

The difference of percentage is significant.

these who remained. This difference of percentages is significant. The teachers who left taught young-farmer classes in a smaller percentage of all the years in which they taught than did those who remained.

In a similar manner, Table XXIX and Figure 11 show the number of teachers and the teacher-years represented by those who had adult-farmer classes ranging from none to sixteen in number. Of the teacher-years represented by the teachers who left, 31.0 per cent included no adult-farmer classes, and 4.6 per cent of the teacher-years represented by those who

TABLE XXIX

TOTAL NUMBER OF ADULT-FARMER CLASSES AND NUMBER OF TEACHERS AND TEACHER-YEARS INVOLVED

Number of classes	Teachers who left		Teachers who remained	
	Number of teachers	Number of teacher-years	Number of teachers	Number of teacher-years
0	33	103	1	12
1	19	73	1	6
2	9	40	8	74
3	8	46	6	61
4	2	15	1	10
5	2	16	3	23
6	2	12	2	20
7	1	9	2	24
8	1	8	1	12
9	1	10	0	0
10	0	0	1	9
16	0	0	1	9
Totals	78	332	27	260
Number of teacher-years with no adult classes		103		12
Per cent of teacher-years with no adult classes		31.0		4.6

The difference of percentage is significant.

remained included no adult-farmer classes. This difference of percentages is significant. A smaller proportion of the teacher-years represented by teachers who left included teaching of one or more adult-farmer classes in their programs than was true for the teachers who remained.

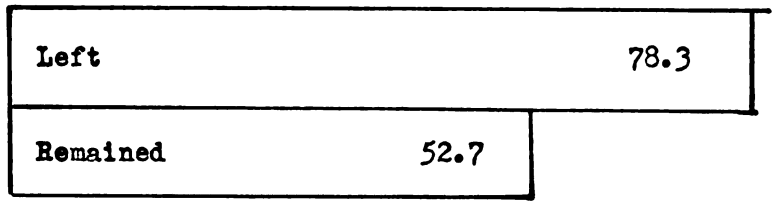


FIGURE 10

PERCENTAGE OF TEACHERS WHO HAD NO YOUNG-FARMER CLASSES

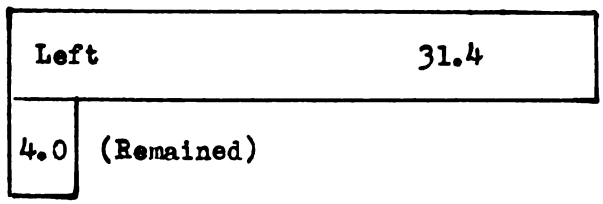


FIGURE 11

PERCENTAGE OF TEACHERS WHO HAD NO ADULT-FARMER CLASSES

The achievement of high school students of vocational agriculture who merit the rank of State Farmer is an indication of successful teaching by the teacher of vocational agriculture. It was felt that the satisfaction which a teacher of vocational agriculture enjoys as a result of some of his students being awarded the degree of State Farmer might be a factor in his decision to remain in teaching, or conversely, that the lack of satisfaction due to failure to develop successful State Farmer candidates might cause some to decide to leave the field of teaching vocational agriculture.

Table XXX shows the number of teachers and number of State Farmers developed in different three-year periods of the teachers' careers. Three-year periods were chosen for three reasons. (1) All of the State Farmers elected from the group taught by teachers who left were developed in the first nine years of teaching. For the teachers who remained, the State Farmers who were elected were spread over twelve years of teaching. These numbers made analysis by three year periods convenient. (2) The grouping into three-year periods was also used so that each group would contain reasonably large numbers of teachers and of State Farmer elections. (3) Three-year periods are short enough to allow possible differences in the two groups of teachers to be shown.

During the first three years of teaching experience,

TABLE XXX

NUMBER OF STATE FARMERS ELECTED IN RELATION TO YEARS OF TEACHING EXPERIENCE

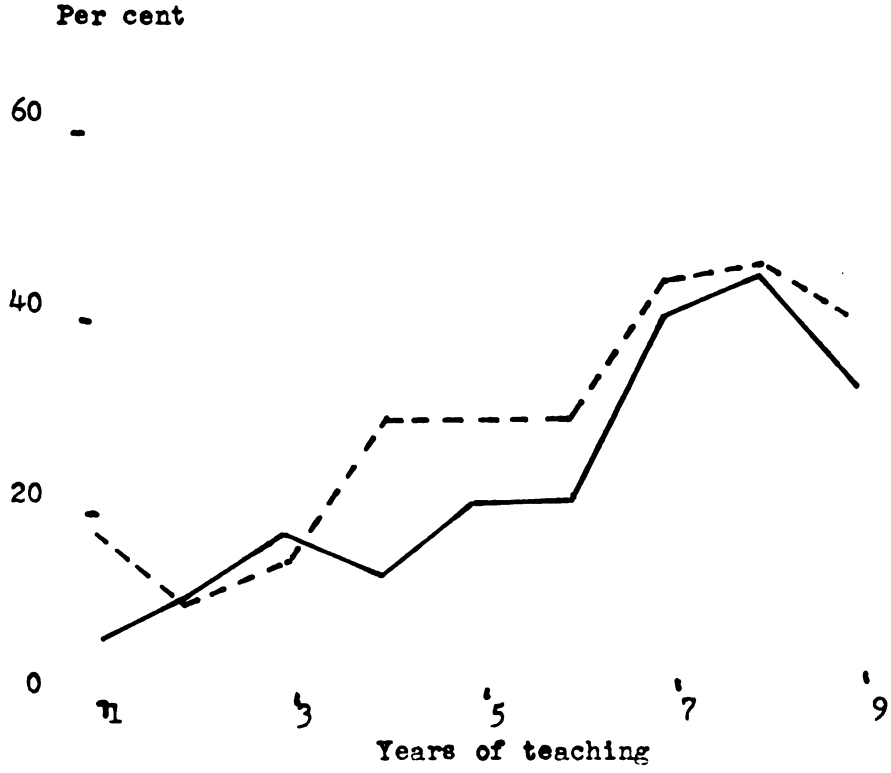
Years of teaching experience	Teachers who left		Teachers who remained	
	Number of State Farmers	Per cent of teachers having State Farmers	Number of State Farmers	Per cent of teachers having State Farmers
First three years	29	29.5	17	33.3
Second three years	30	27.0	43	59.3
Third three years	37	52.3	61	59.3

Difference of percentage in first three years not significant.

Difference of percentage in second three years is significant.

Difference of percentage in third three years is not significant.

there was no significant difference in the percentage of teachers who had successful candidates between those who left and those who remained. Neither was there any difference between the two groups of teachers in the development of successful State Farmer candidates during the third three years of experience. In the second three years of experience, 27.0 per cent of the teachers who left had successful State Farmer candidates and 59.3 per cent of those who remained had successful State Farmer candidates. This difference of percentage is statistically significant. A comparison of the number of State Farmers by years is shown in Figure 12.



Key:
Teachers who left _____
Teachers who remained - - - - - -

FIGURE 12

PERCENTAGE OF TEACHERS WHO HAD STATE FARMERS BY YEARS OF TEACHING EXPERIENCE

The reader will recognize that in each of the three-year periods studied, a larger percentage of the teachers who remained had State Farmers elected even though the size of the difference in two of the periods is not statistically significant.

The tenure of a teacher in a school may be a factor in his decision to remain in or to leave the field of teaching vocational agriculture. If teachers have short tenures, they may find it desirable to enter some other occupation. A comparison of the tenures in the first positions as a teacher of vocational agriculture is shown in Table XXXI. While the difference of percentage is not statistically significant, it is interesting to note that 43.6 per cent of the teachers who left remained in their first position as teacher of vocational agriculture only one or two years as compared with 29.7 per cent of those who remained in teaching of vocational agriculture.

Teachers were asked to state their reasons for leaving their first position as teacher of vocational agriculture. The reasons given are summarized in Table XXXII, which shows the percentage of teachers listing each item as their reason for leaving their first position as teacher of vocational agriculture. None of the differences of percentage is significant.

It is interesting to note that more of the teachers who

TABLE XXXI

NUMBER AND PER CENT OF TEACHERS AND YEARS TAUGHT IN FIRST SCHOOL

Years in first school	Teachers who left		Teachers who remained	
	Number of teachers	Per cent of teachers	Number of teachers	Per cent of teachers
1 - 2	34	43.6	8	29.7
3 - 4	30	38.4	4	14.8
5 - 6	6	7.7	7	25.9
7 - 8	6	7.7	2	7.4
9 - 10	1	1.3	5	18.5
11 - 12	1	1.3	1	3.7
Totals	78	100.0	27	100.0

Difference of percentage of those leaving their first position after 1 - 2 years is not significant.

TABLE XXXII

REASONS GIVEN BY TEACHERS OF VOCATIONAL AGRICULTURE FOR LEAVING THEIR FIRST DEPARTMENT

Reasons for leaving	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
Administration	9	12.5	2	7.4
Salary	14	19.5	7	25.9
Interest in business or industry	3	4.2	0	
Graduate work	3	4.2	0	
Military service	9	12.5	1	3.7
Location in the state	7	9.7	5	18.5
Farm	7	9.7	0	
Opportunity to advance, position, etc.	7	9.7	4	14.8
Government service, Farm Security, Soil Conservation, Extension, etc.	8	11.1	0	
Miscellaneous	5	6.9	1	3.7
Still in same position	0		7	26.0
Totals	72	100.0	27	100.0

None of the differences of percentage is significant.

left teaching of vocational agriculture left their first position because of misunderstanding with administrators of the school. On the other hand, a larger percentage of the teachers who remained, left their first school for better salary, for better location in the state, or because they thought the change of schools represented a professional advancement.

Other reasons for leaving the first position as teacher of vocational agriculture which were given by teachers who left, included such items as, "to enter graduate work," "interest in business or industry," "to enter government service," (such as Farmers' Home Administration, Soil Conservation Service, etc.), or "to enter farming." These represent reasons for leaving the profession as well as reasons for leaving the first position. They are similar in many respects to replies received by other research workers as to why teachers left the profession.

Table XXXIII and Figure 13, showing the data concerning reasons teachers gave for leaving their first positions, are the same as Table XXXII except that those who left the profession have been excluded and those who were still teaching in the first school position were also excluded from the data. Percentages were computed for those remaining.

Attention is called to the fact that more of the teachers who later left the profession, left their first position because of the administration of the school and because of mili-

TABLE XXXIII

REASONS FOR LEAVING THEIR FIRST TEACHING POSITION IN VOCATIONAL AGRICULTURE AS REPORTED BY THE TEACHERS WHO HELD MORE THAN ONE POSITION

Reason	Teachers who left		Teachers who remained	
	Number	Per cent	Number	Per cent
Administration	9	17.6	2	10.0
Salary	14	27.6	7	35.0
Military	9	17.6	1	5.0
Location in the state	7	13.7	5	25.0
Opportunity to advance	7	13.7	4	20.0
Miscellaneous	5	9.8	1	5.0
Totals	51	100.0	20	100.0

None of the differences of percentage is significant.

tary service. On the other hand, more of the teachers who remained, left their first positions to secure better salary, for better location, or for opportunity to advance.

Teachers were asked to express their opinions regarding their own program of vocational agriculture under the following headings: pupils made good use of their time, pupils were interested in classroom work, pupils were interested in supervised farming, pupils were interested in Future Farmer work, the department ranked well with the teachers, the department ranked well in the school, and the department ranked well with the school administrators. They were asked to indicate their opinions by ranking their own department as "good," "medium," or "poor." Table XXXIV shows the number and per cent ranking

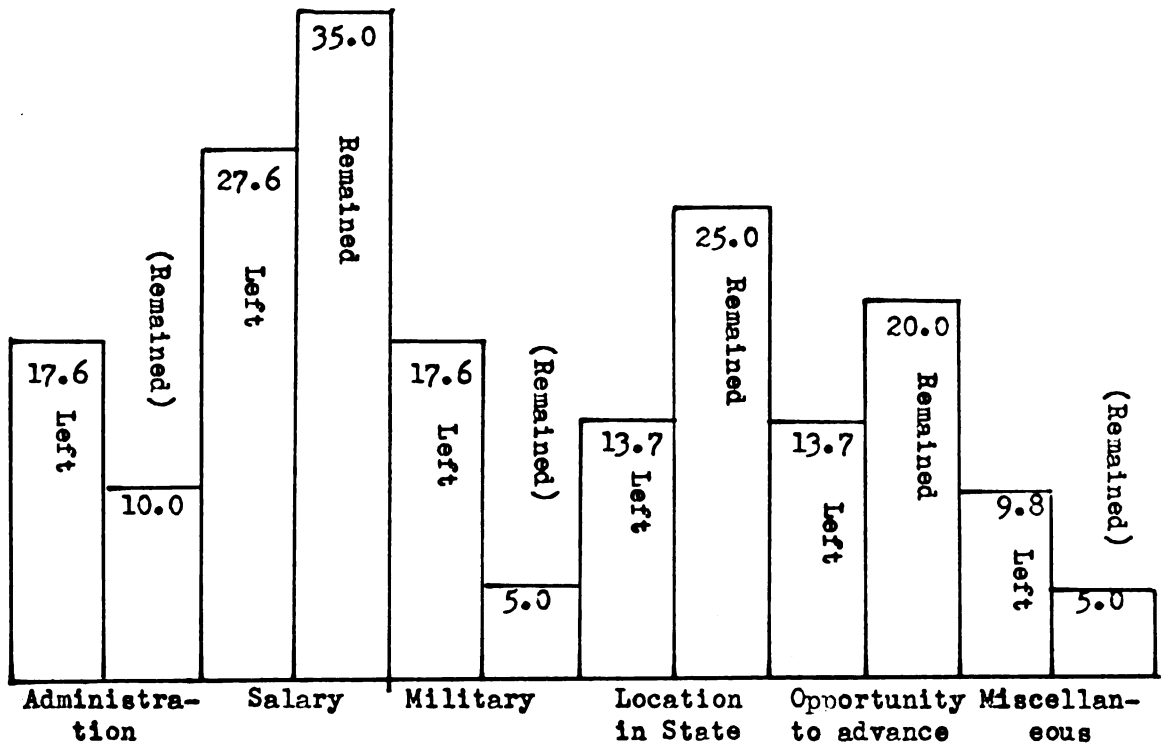


FIGURE 13

REASONS FOR LEAVING THEIR FIRST TEACHING POSITION IN VOCATIONAL AGRICULTURE AS REPORTED BY THE TEACHERS WHO HELD MORE THAN ONE POSITION

TABLE XXXIV

OPINIONS OF TEACHERS REGARDING THEIR OWN PROGRAMS OF VOCATIONAL AGRICULTURE

Item	Teachers who left				Teachers who remained			
	Number Responding	Good Per cent	Medium Per cent	Poor Per cent	Number Responding	Good Per cent	Medium Per cent	Poor Per cent
Pupils made good use of their time	72	51.4	47.2	1.4	27	40.8	59.2	0.00
Pupils interested in classroom work	71	56.3	40.9	2.8	27	63.0	37.0	0.00
Pupils interested in supervised farm practice	71	52.1	42.3	5.6	27	59.3	40.7	0.00
Pupils interested in F.F.A.	72	59.7	32.0	8.3	27	88.9	11.1	0.00
Department ranked well in school	72	73.7	26.3	0.0	27	92.6	7.4	0.00
Department ranked well with teachers	72	65.3	33.3	1.4	27	81.5	18.5	0.00
Department ranked well with administrators	72	68.0	27.8	4.2	27	92.6	7.4	0.00
Totals	502	61.0	35.0	4.0	189	74.1	25.9	0.00

Difference of percentage ranking all items good is significant.

each item either "good," "medium," or "poor." The total number of replies ranked "good" was computed separately for the two groups of teachers. For the teachers who left, 61.0 per cent of all the replies were "good," while 74.1 per cent of all the replies of the teachers who remained ranked the items "good." Figure 14 illustrates these differences graphically. The difference of percentage is significant. It is of interest to note that none of the teachers who remained ranked any item "poor."

REASONS GIVEN BY TEACHERS FOR LEAVING OR REMAINING IN THE PROFESSION OF TEACHING VOCATIONAL AGRICULTURE

In this study the writer listed the reasons given by teachers for leaving or for remaining in the profession of teaching vocational agriculture. Teachers were asked to check this list indicating whether the item was a "major factor," a "minor factor," or "had no bearing" on their decision to leave, or to remain in, the field. Both groups of teachers were asked to check the same list so that comparisons could be made between the two groups for their reaction to any item in the list. For example, was interest in teaching a "major factor," a "minor factor," or did it have "no bearing" on a decision to remain in teaching vocational agriculture? Did some teachers consider "opportunity" a major factor in a decision to leave,

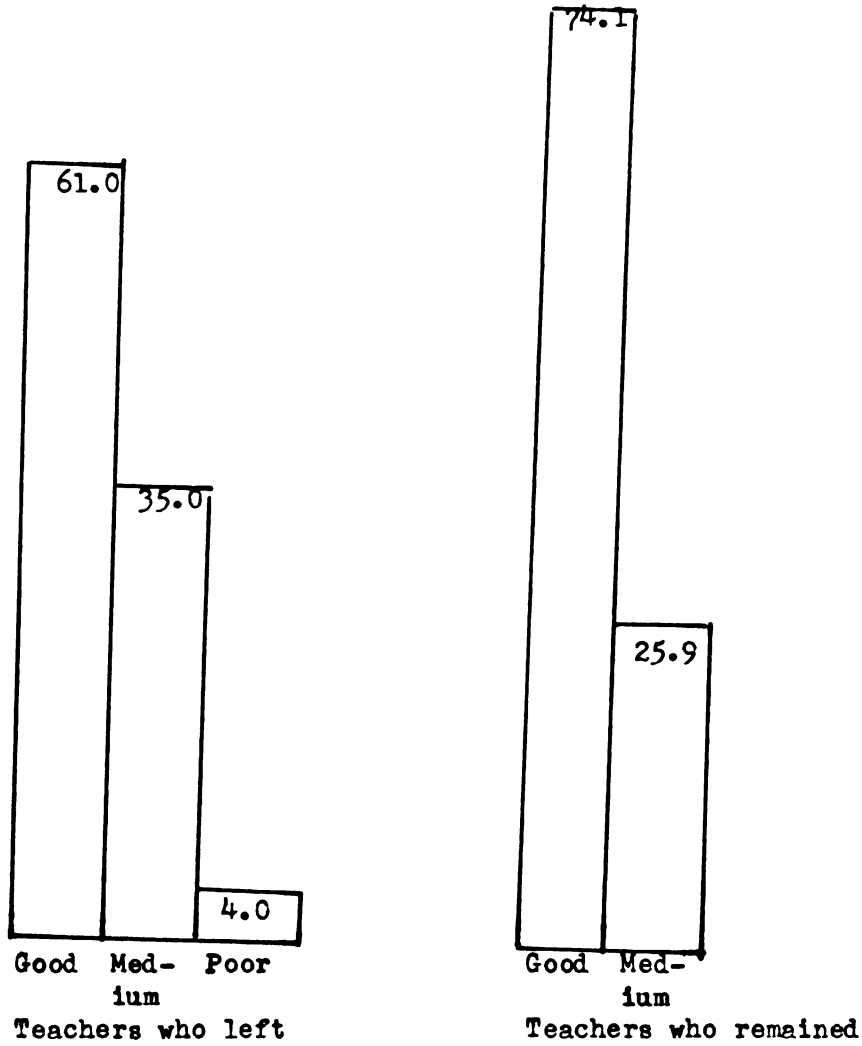


FIGURE 14

PERCENTAGE OF TEACHERS RANKING THEIR OWN PROGRAMS GOOD, MEDIUM, OR POOR

while others considered it a major factor in a decision to remain in teaching?

Table XXXV shows the percentage of teachers who ranked each item as a major factor or a minor factor or as having no bearing on their decisions. The difference of per cent of teachers listing the item as a major factor was computed and those which were significantly different are indicated in Table XXXVI.

Comparisons may be made between the replies of the two groups of teachers. For example, 11.8 per cent of the teachers who left checked interest in teaching as a major factor in their decision to leave while 88.9 per cent of those who remained indicated that this item was a major factor in their decision to remain.

A larger percentage of those who remained, than of those who left, indicated salary as a major factor in helping them to reach a decision. Security, summer work, a twelve month job, outdoor work, accomplishment of pupils, cooperation of pupils, social prestige, and family preference all loomed large as factors influencing those who remained in reaching their decision as compared with those who left.

Some of the above findings are partially supported by findings of other workers. Rebles states that teachers of vocational agriculture who remain in teaching have outstanding

TABLE XXXV

RELATIVE IMPORTANCE OF FACTORS AFFECTING DECISIONS OF TEACHERS OF VOCATIONAL AGRICULTURE TO REMAIN IN OR TO LEAVE TEACHING OF VOCATIONAL AGRICULTURE AS REPORTED BY THE TEACHERS

Factor	Teachers who left				Teachers who remained			
	Number Responding	Major Per cent	Minor Per cent	No bearing Per cent	Number Responding	Major Per cent	Minor Per cent	No bearing Per cent
Opportunity	76	56.6	31.6	11.8	26	53.8	42.3	3.9
Interest in teaching	76	11.8	23.7	64.5	27	88.9	11.1	0.0
State supervision	76	11.8	19.8	68.4	27	22.3	27.0	40.7
Salary	76	50.0	27.6	22.4	27	77.8	18.5	3.7
State Reports	76	9.2	23.7	67.1	27	3.7	29.6	66.7
Project Supervision	76	1.3	13.2	85.5	27	55.6	33.3	11.1
Amount of work	76	9.2	17.1	73.7	27	11.1	44.4	44.5
Security	76	36.8	15.8	47.4	27	81.5	14.8	3.7
Summer work	76	1.3	9.2	89.5	27	66.7	25.9	7.4
Accomplishment of pupils	76	4.0	28.9	67.1	27	66.7	29.6	3.7
Social prestige	76	1.3	17.1	81.6	27	37.0	51.9	11.1
Cooperation of pupils	76	4.0	21.0	75.0	27	63.0	29.6	7.4
Jealous teachers	76	3.9	16.0	80.1	27	3.7	11.1	85.2
Teachers meetings	76	1.3	6.6	92.1	27	11.1	33.3	55.6
Athletic Events	76	0.0	11.8	88.2	27	7.4	40.7	51.9
P.T.A. Meetings	76	0.0	2.6	97.4	27	7.4	29.6	63.0
Community pressure	76	6.6	17.1	76.3	27	3.7	37.0	59.3
Housing for teachers	76	6.6	15.8	77.6	27	3.7	25.9	70.4
Community contributions	73	8.2	17.8	74.0	27	15.4	42.3	42.3
Petty politics	76	14.5	15.8	69.7	27	0.0	22.2	77.8
Family preference	75	6.7	10.7	82.6	26	28.7	28.7	38.6
Stepping stone	75	24.0	26.7	49.3	27	18.5	51.9	29.6
Routine school duties	76	18.4	26.6	55.0	27	0.0	55.6	44.4
Twelve month job	75	4.0	8.0	88.0	27	85.2	11.1	3.7
Outdoor work	76	13.2	18.5	42.3	27	85.2	14.8	0.0
Opportunity to advance	76	50.7	26.7	22.6	27	40.7	55.6	3.7

TABLE XXXVI

MAJOR ITEMS WHICH HAD A SIGNIFICANT DIFFERENCE OF PERCENTAGE ASSOCIATED WITH DECISIONS OF TEACHERS TO REMAIN IN OR TO LEAVE TEACHING OF VOCATIONAL AGRICULTURE

	Teachers who left	Teachers who remained
	Per cent listing item as major factor	Per cent listing item as major factor
Interest in teaching	11.8	88.9
Salary	50.0	77.8
Project supervision	1.3	55.6
Security	36.8	81.5
Summer work	1.3	66.7
Accomplishment of pupils	4.0	66.7
Social prestige	1.3	37.0
Cooperation of pupils	4.0	63.0
Teachers meetings	1.3	11.1
Family preference	6.7	28.6
Twelve month job	4.0	85.2
Outdoor work	13.2	85.2

Difference of percentage is significant in each case.

professional traits which probably are reflected, in this study, by the responses concerning accomplishment and cooperation of pupils.[89]

Robinson found such items as attractive profession, love of teaching or of children, financial response, and family influence affecting the choice of teaching as a career for those he studied.[90]

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[89] Op. cit. Robles, p. 209.

[90] Op. cit. Robinson, p. 31-32.

Studies in which factors of summer work, outdoor work, twelve month job, were listed as reasons for remaining in teaching have not been found.

PARTICIPATION IN COMMUNITY AND SERVICE CLUBS

Table XXXVII shows the number of teachers in the two groups who were members of community or service clubs. Reports indicated that some teachers were members of more than one club, while many were non-members. For the teachers who left, 38 individuals held 43 memberships, while 22 of the teachers still teaching held 32 memberships. The chi-square test for the sig-

TABLE XXXVII

MEMBERSHIP OF TEACHERS OF VOCATIONAL AGRICULTURE IN COMMUNITY AND SERVICE CLUBS

Organization	Teachers who left Number who were members	Teachers who remained Number who were members
Chamber of Commerce	7	7
Exchange	2	0
Kiwanis	2	2
Lions	14	9
Rotary	5	6
Miscellaneous	13	8
Total memberships	43	32
Total teachers who were members	38	22
Total non-members	31	3
Total Reporting	69	25

Difference in number who were members and non-members is significant.

nificance of the difference in the numbers of the two groups who were members and non-members, shows that the difference is significant and that the teachers who remained in teaching of vocational agriculture were more likely to belong to service clubs than were the teachers who left.

INTEREST IN ANOTHER BUSINESS OR PROFESSION WHILE TEACHING VOCATIONAL AGRICULTURE

Table XXXVIII shows the number and per cent of teachers in the two groups who had ownership in or who participated in another business or profession while teaching vocational agriculture. The Table shows that the teachers who left had far less ownership or participation in outside business or professional activities while they were teaching vocational agriculture than did the teachers who remained. Of the teachers who left, 35.1 per cent had other business or professional work while teaching and 92.6 per cent of the teachers who remained had outside business or professional activities. The difference of these two percentages is statistically significant.

Comparisons may be made between the teachers who left and those who remained regarding specific items in Table XXXVIII. Of the teachers who left, 15.6 per cent were non-operating farm owners as compared with 18.5 per cent of those who remained. A much greater variation appears in a comparison of the two groups

TABLE XXXVIII

INTEREST IN ANOTHER BUSINESS OR PROFESSION WHILE TEACHING VOCATIONAL AGRICULTURE

Business or Profession	Teachers who left		Teachers who remained	
	Number who had other business or profession	Per cent who had other business or profession	Number who had other business o or profession	Per cent who had other business or profession
Owner (not operating)of a farm	12	15.6	5	18.5
Operater of a farm	3	3.9	5	18.5
Business related to agriculture	2	2.6	4	14.8
Business not related to agriculture	1	1.3	4	14.8
Profession	3	3.9	0	
Non-Teaching job	6	7.8	7	26.0
No other work	50	64.9	2	7.4
Totals	77	100.0	27	100.0
Per cent having other work		35.1		92.6
Difference of percentage is significant.				

in regard to farm operation. Of those who left, 3.9 per cent were farm operators, while 18.5 per cent of those who remained were farm operators.

Similarily, the teachers who left showed a much smaller percentage who were interested in business, either related or not

related to agriculture, as compared with the business interests of teachers who remained. A total of 3.9 per cent of teachers who left were interested in business, including that related to agriculture and that which was not related to agriculture, while 29.6 per cent of the teachers who remained had such interests.

Interest in another profession was reported by 3.9 per cent of teachers who left. "Income tax expert," and other similar items were listed by the individuals represented in this percentage. None of the teachers who remained listed interests under this heading.

Non-teaching jobs while teaching vocational agriculture were reported by 7.8 per cent of the teachers who left and by 26.0 per cent of those who remained. Such jobs as "Saturday work in a grocery store," "work evenings in a hamburger stand," "dairy inspector for the city," "city health inspector," and other similar jobs were reported under this heading.

It appears that the teachers who remained were either required to seek outside employment of some sort to supplement their incomes or that the teaching of vocational agriculture was not a full time job; therefore, the teacher found outside employment to capitalize on his surplus time and energy.

It is possible that the outside work of the teacher was a factor in his remaining in teaching of vocational agri-

culture. For example, a teacher who acquired a commercial business or farm, or one who had a supplementary job while teaching and thereby was securing a satisfactory income, would be reluctant to change occupation because of the loss of a portion of his income. The writer, personally, is acquainted with individual teachers of vocational agriculture who have decided not to change positions as teachers of vocational agriculture because they would lose the income from testing water and milk for the city health authorities in the city in which they are employed.

OCCUPATIONS AFTER TEACHING OF THOSE WHO LEFT TEACHING OF VOCATIONAL AGRICULTURE

The first, second, and third positions of teachers who left and the number and per cent engaged in each of these occupations is shown in Table XXXIX. Note that nearly one-fourth of the first positions were in various branches of the United States Department of Agriculture and that slightly over one-fifth were in college teaching, extension work, 4H Club work, or graduate study at college. Farming accounts for approximately another one-fifth of first positions of those who left. Another first position for 15.4 per cent was military service. There were two individuals in miscellaneous activities and one in other school work.

TABLE XXXIX

FIRST, SECOND, AND THIRD POSITIONS OF THOSE WHO LEFT THE FIELD OF TEACHING VOCATIONAL AGRICULTURE

Kind of position	First position		Second position		Third position	
	Number	Per cent	Number	Per cent	Number	Per cent
U. S. Department of Agriculture	19	24.4	2	4.2	4	23.6
College extension, 4H club, teaching, graduate work	17	21.8	12	25.0	6	35.3
Other public school work	1	1.2	1	2.0	0	
Farming	16	20.5	6	12.5	2	11.7
Business and industry	11	14.1	12	25.0	2	11.7
Military	12	15.4	7	14.6	0	
Miscellaneous	2	2.6	8	16.7	3	17.7
Totals	78	100.0	48	100.0	17	100.0

The twelve persons, 15.4 per cent, whose first positions were in military service may be included in some other work under the heading of second position in Table XXXIX. For example, a teacher who left the teaching of vocational agriculture to enter military service may have gone into farming, may have entered the graduate school at college, or may have entered some other field of work upon discharge from military service.

Some of the teachers who left seem to have drifted from one occupation to another quite frequently. Table XXXIX shows the number who were in first, second, and third positions after leaving teaching of vocational agriculture. The Table shows that seventeen, or 21.8 per cent of the 78 teachers who left

had at least three occupations. No attempt was made to follow the job changes beyond the third job, except to determine the present position of teachers who left.

Table XL shows a breakdown of positions occupied by teachers who left as of approximately June 30, 1949. The breakdown of items in this Table is somewhat more detailed than the items in Table XXXIX, so that the kinds of positions occupied

TABLE XL

POSITIONS OF FORMER TEACHERS OF VOCATIONAL AGRICULTURE AS OF JUNE 30, 1949

Position	Number	Per cent
Farming	18	23.0
County agent and 4H club agent	10	12.8
Soil conservation and Farmers' Home Administration	11	14.1
Agricultural college and Extension Specialist	6	7.7
Other school work	7	9.0
Other agricultural work	1	1.3
Commercial and cooperatives	14	17.9
Military	2	2.6
Miscellaneous non-agriculture	7	9.0
Unknown	2	2.6
Totals	78	100.0

by teachers after leaving teaching of vocational agriculture can be adequately shown.

In the present study, as in many others, the data show that teachers have been able to capitalize on their past training and experience to a reasonably high degree in their new occupations. Table XLI shows that 89.5 per cent of the teachers who left are engaged in work of an agricultural nature and that the work of 47.4 per cent involves some form of educational work. Of those who left, 10.5 per cent are engaged in non-agricultural work and 52.6 per cent are in non-educational work.

GROWTH CURVES OF TEACHERS OF VOCATIONAL AGRICULTURE

The analysis of data in this chapter has revealed that there are certain significant differences between the group of teachers who left and those who remained in teaching vocational agriculture. A partial list of these differences is as follows:

1. Professional credits earned after graduation from Michigan State College with the Bachelor's Degree.

2. Technical credits earned after graduation from Michigan State College with the Bachelor's Degree.

3. Per cent of teacher-years with less than 60 per cent of time on vocational agriculture.

4. Per cent of teacher-years in which enrollment in all-day classes was below 30 pupils.

TABLE XLI

TYPES OF WORK BEING PERFORMED BY FORMER TEACHERS OF VOCATIONAL AGRICULTURE AS OF JUNE 30, 1949

Type of work	Number engaged in the work	Per cent engaged in the work
Agricultural work	68	89.5
Non-agricultural work	8	10.5
Total	76	100.0
Educational work (considered as public school work, extensions work, 4H club work, college teaching, R.O.T.C.	36	47.4
Non-educational work	40	52.6
Total	76	100.0

5. Per cent of teacher-years in which enrollment in all-day classes was above 50 pupils.

6. Number of teachers who taught non-vocational classes.

7. The number of young-farmer classes taught.

8. The number of adult-farmer classes taught.

9. The number of State Farmers in the second three years of teaching vocational agriculture.

With these factors in mind, graphs have been drawn showing the changes that occur which represent the evidences of growth of the teachers who left and the evidences of growth of the teachers who remained. These patterns may be used as a

means of comparing the evidence of growth of an individual teacher with a group of teachers.[91] The patterns which have been constructed include; salary of teachers by years, enrollment in all-day classes, per cent of time on vocational agriculture, number of State Farmers, and number of young-farmer and adult-farmer classes taught by years.

If teacher-educators, supervisors, and others are to work with teachers in-service, on programs which will result in the growth of teachers, means must be found for recording the rate and quality of growth, and for presenting a picture of growth which will be useful to the teacher and helpful to the teacher-educators and supervisors in further assisting the teacher.

Graphs have been constructed for two of the teachers in this study for the purpose of presenting one suggestion for meeting the problem of recording and displaying elements in the growth of teachers on the following items, which it is assumed are items indicative of the growth of teachers in-service: (See Figures 15 and 16 on pages 128 and 129.)

1. Salary by years.

2. Enrollment in all-day classes by years.

3. Per cent of time spent on vocational agriculture by years.

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[91] See Figures 17 to 26 in the appendix.

4. Number of State Farmers by years.

5. Number of young-farmer and adult-farmer classes by years.

The graphs of the individual teachers, Figures 15 and 16, show that one teacher, Number 7, Figure 16, received rather rapid increases in salary. However, these increases were not out of line with the salary pattern of the years in which he was teaching, as shown by Figure 17 in the Appendix. Outstanding in his record, as shown by the graphs, are increases in enrollment, number of State Farmers, and per cent of time spent on the program of vocational agriculture.

The second teacher, Number 77, received some increases in salary as shown by Figure 15. However, the increases were not at a rate comparable with the pattern shown in Figure 17 in the Appendix. Other revealing factors, indicating lack of growth on the part of the teacher, are decreases in enrollment in the two schools in which this teacher held positions, and the fact that he had no State Farmers in the five years he taught vocational agriculture.

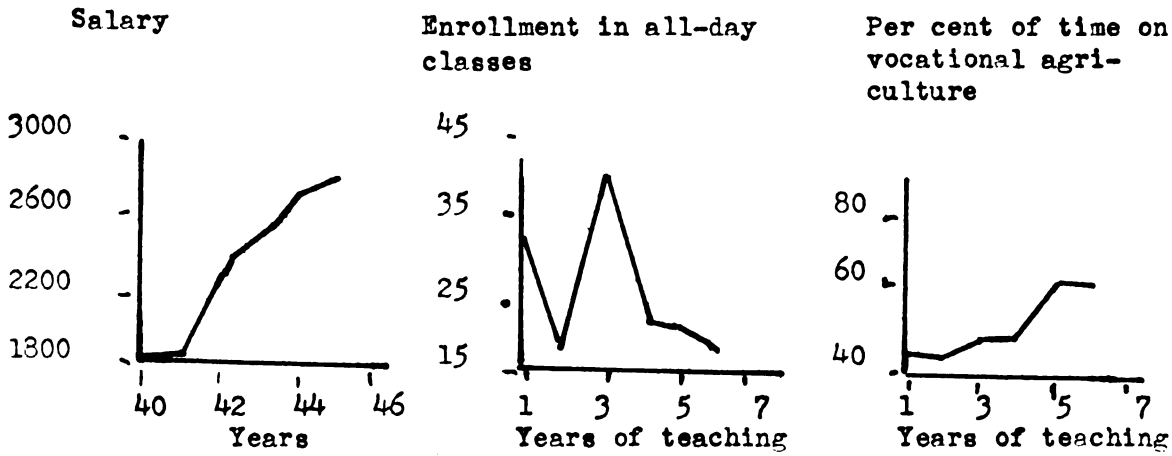

FIGURE 15

EVIDENCES OF GROWTH OF TEACHER NUMBER SEVENTY-SEVEN

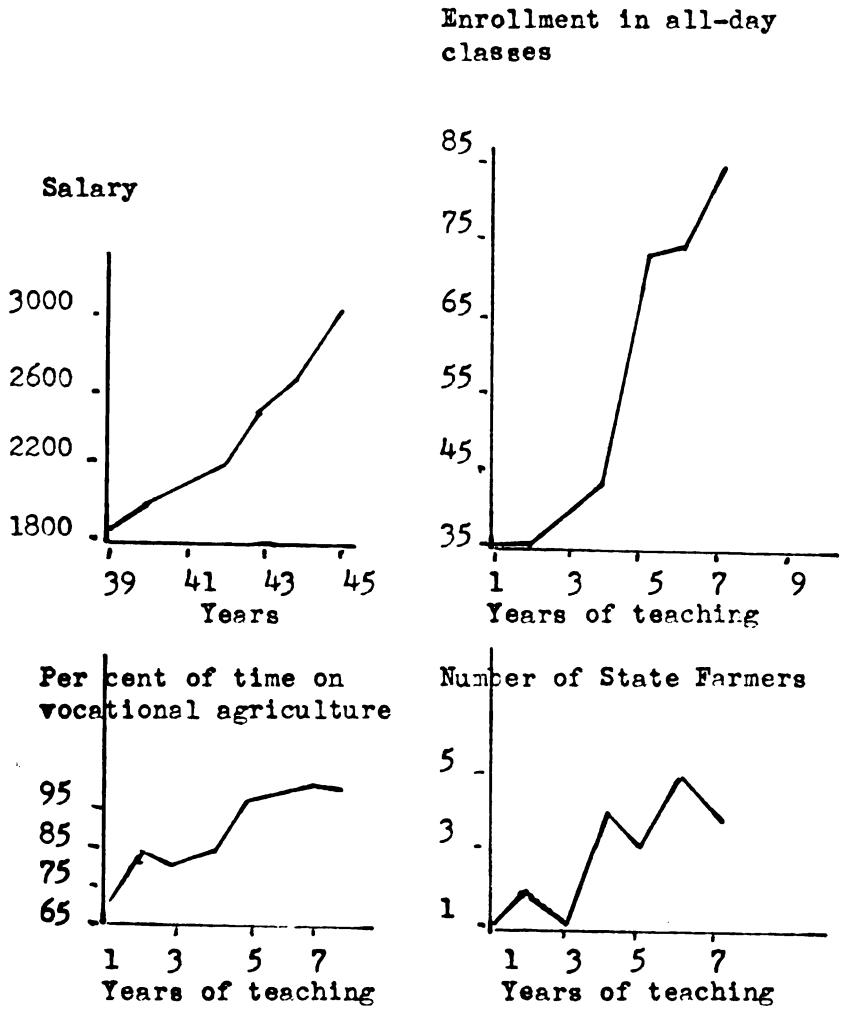

FIGURE 16

EVIDENCES OF GROWTH OF TEACHER NUMBER SEVEN

CHAPTER VI

SUMMARY

Chapters four and five present data of the present study and provide explanations as to treatment of the data together with interpretation of the evidence. This chapter will summarize the major findings of chapters four and five.

HIGH-SCHOOL COURSES AND UNITS OF WORK SUBMITTED FOR ADMISSION TO MICHIGAN STATE COLLEGE

None of the differences of percentage computed for this section proved to be statistically significant. However, the following are called to the attention of the reader as important in indicating trends.

All of the teachers included in this study submitted high-school credits in English, mathematics, science, and social science for admission to college.

Of the teachers who remained, 74.1 per cent presented units in agriculture, 33.3 per cent presented units in industrial arts, and 77.8 per cent presented units in miscellaneous subjects such as journalism and commercial. Of the teachers who left, 66.2 per cent presented units in agriculture, 24.7 per cent presented units in industrial arts and 68.8 per cent presented units in miscellaneous subjects.

Of the teachers who remained, 81.5 per cent presented

three or more units in social science, and 37.0 per cent presented three or more units in agriculture. Of those who left, 70.1 per cent presented three or more units in social science and 26.0 per cent presented three or more units in agriculture. Of the teachers who left, 60.0 per cent presented three or more units in science as compared with 44.4 per cent of those who remained.

FIRST INSTITUTION ENTERED AFTER GRADUATION FROM HIGH SCHOOL

The differences of percentages which were computed and which are summarized under this heading were not statistically significant. They indicate a trend which is called to the attention of the reader in the following statements.

Michigan State Collegewas the first institution entered after graduation from high-school for 73.0 per cent of the teachers who left and for 59.3 per cent of those who remained.

Of those who left, 61.9 per cent of these who transferred to Michigan State College from other institutions, transferred from county normal schools or from State Teachers' Colleges. Of those who remained, 72.7 per cent of those who transferred from other institutions to Michigan State College transferred from county normal schools or from State Teachers' Colleges.

COLLEGE MARKS OF TEACHERS OF VOCATIONAL AGRICULTURE

The differences of the all-college grade-point ratios for teachers who left and those who remained was not statistically significant. A slightly higher percentage, 51.9, of those who remained had grade-point ratios ranging from 1.00 to 1.49 as compared with 47.4 per cent for those who left. Also, 14.8 per cent of those who remained had grade-point ratios from 2.00 to 3.00 while 11.8 per cent of those who left had grade-point ratios ranging from 2.00 to 3.00.

In the technical agriculture major, the grade-point ratio for those who left was somewhat higher than for those who remained. The percentage of those who left who had grade-point ratios below 2.00 was 52.6, and for those who remained the percentage below 2.00 was 59.3.

The grade-point ratios in professional courses ranged somewhat lower for the teachers who left than for those who remained. For those who left, 70.5 per cent had grade-point ratios below 2.00, while for those who remained, 63 per cent had grade-point ratios below 2.00.

Student teaching marks for teachers who left ranged lower than for those who remained. Of the teachers who left, 37.2 per cent received student teaching marks of "AA" or "AB", while 46.2 per cent of those who remained received such marks. Also of those who left, 17.9 per cent received student

teaching marks of "BC" or "CC" as compared with 11.5 per cent for those who remained. None of the teachers who remained received student teaching marks as low as "CC", while 12.8 per cent of those who left received "CC" in student teaching.

The difference of marks for the two groups of teachers was not significant at any point. Attention is called to the fact that, (1) there is very little difference between the all-college grade-point ratios for the two groups, (2) the grade-point ratio in the technical agriculture major was higher for those who left, (3) the grade-point ratio in professional courses was higher for those who remained, and (4) the student teaching marks were higher for those who remained.

FRESHMAN WEEK TEST SCORES

The teachers who left ranked higher on the American Council on Education Psychological Examination for College Freshmen given at the time of admission to Michigan State College than did those who remained. The greatest difference appeared in the per cent ranking in the first three deciles. For those who left, 34.0 per cent ranked in these deciles, while for those who remained, the percentage in deciles one to three was 44.5.

The teachers who left ranked lower on the Cooperative English Test than did those who remained. Of those who left, 49.9 per cent ranked in the lower three deciles while 33.3

per cent of those who remained ranked in these deciles. Also 26.7 per cent of those who left ranked in the upper three deciles as compared with 33.3 per cent of those who remained.

The difference in ranking of the teachers on these two tests was not statistically significant.

COLLEGE ACTIVITIES OF TEACHERS OF VOCATIONAL AGRICULTURE

Of the teachers who left, 42.3 per cent belonged to social fraternities whereas only 18.5 per cent of those who remained belonged to social fraternities while in college. This difference of percentage is statistically significant.

Teachers who left belonged to an average of 2.3 college clubs or organizations per person, while those who remained held membership in an average of 2.1 organizations per person. Practically the same percentage of teachers from each group belonged to at least one college organization.

Membership in honorary fraternities was held by 7.7 per cent of the teachers who left and by 14.8 per cent of those who remained. The numbers involved were very small, and the difference of percentages is not significant.

AGES AT VARIOUS POINTS IN THE PRE-SERVICE CAREER OF TEACHERS WHO LEFT AND THOSE WHO REMAINED

There was practically no difference in the mean ages of the two groups at the time of graduation from high-school.

At the time of matriculation at Michigan State College, the mean age of teachers who remained was 22.0 years as compared with 20.5 for those who left. This difference is significant at the five per cent level.

The mean age of the two groups at the time of graduation from Michigan State College was 24.4 years for those who left and 27.3 years for those who remained. The difference of these means is slightly short of being significant at the five per cent level.

PROFESSIONAL ACTIVITIES AFTER GRADUATION FROM MICHIGAN STATE COLLEGE

A smaller percentage of teachers who left belonged to the Michigan Education Association than of those who remained. The percentages were 74.3 and 82.6 respectively.

Of those who left, 72.2 per cent, and of those who remained, 92 per cent were members of the Michigan Association of Teachers of Vocational Agriculture. These same individuals were also members of the Michigan Vocational Association and of the American Vocational Association.

Membership was held in the Grange by 28.6 per cent of those who left and by 40.0 per cent of those who remained.

Farm Bureau membership was held by 43.1 per cent of those who left and by 40.0 per cent of those who remained.

None of the above differences of percentage is significant.

A significantly higher percentage of the teachers who remained earned credits in technical agriculture beyond the Bachelor's Degree.

Professional credits beyond the Bachelor's Degree were earned by a significantly higher percentage of the teachers who remained than by those who left.

A significantly higher number of those who remained earned eleven or more professional credits than did those who left.

There was practically no difference in the average salary, in any year, received by the teachers who left and by those who remained.

A significantly greater percentage of teacher-years was spent by teachers who left on programs in which less than 60.0 per cent of time was spent on vocational agriculture.

The mean enrollment by years in all-day classes for teachers who left and for those who remained shows practically no difference.

The teacher-years, spent by teachers who left and by those who remained, in programs with enrollments in all-day classes of less than 30 pupils, is significantly different. The teachers who left spent more teacher-years in programs of less than 30 all-day pupils.

A significantly higher percentage of teacher-years were

spent by teachers who remained in programs of 50 or more all-day pupils.

Of the teachers who left, 78.1 per cent of teacher-years were spent in programs with less than three all-day classes in vocational agriculture. For the teachers who remained the percentage is 70.0. The difference of percentages is significant.

A significantly higher percentage of teacher-years represented by teachers who left was spent in programs with two or more non-vocational classes.

There were no young-farmer classes in 78.3 per cent of the teacher-years represented by the teachers who left and no young-farmer classes in 52.7 per cent of the teacher-years represented by the teachers who remained. This difference of percentage is significant.

The percentage of teachers from the two groups who developed successful State Farmer candidates was higher for those who remained than for those who left. The difference of percentage was significant in the second three-year period of teaching experience. It was not significant in the first or third three-year period.

Of the teachers who left, 43.6 per cent remained in their first position as instructor of vocational agriculture only one or two years. A corresponding percentage for the

teachers who remained was 29.7. The difference of percentage is not significant.

Teachers who remained in teaching vocational agriculture were most likely to have left their first position for better salary, for a better location, or for a better opportunity to advance. Teachers who left were most likely to have left their first position because of differences with the administration of the school or because of interest in other kinds of work.

A significantly higher percentage of the teachers who remained than of those who left ranked their programs "good" in terms of the following items: use of time by pupils; interest of pupils in classroom work; interest of pupils in supervised farm practice; interest of pupils in Future Farmers of America; ranking of the department in the school; ranking of the department with other teachers in the school; and ranking of the department with the administrators of the school. Of the teachers who left, 61.0 per cent ranked their department "good," while 74.1 per cent of those who remained ranked their departments "good" in these items.

REASONS GIVEN BY TEACHERS FOR LEAVING OR REMAINING IN THE PROFESSION OF TEACHING VOCATIONAL AGRICULTURE

The major factors affecting decisions of teachers to leave the profession of teaching vocational agriculture as

given by the teachers were; opportunity; opportunity to advance; salary; and security.

The major factors affecting decisions of teachers to remain in the profession of teaching vocational agriculture as given by the teachers who remained were: interest in teaching; supervision of projects; summer work; accomplishment of pupils; cooperation of pupils; twelve month job; outdoor work; and opportunity.

PARTICIPATION IN COMMUNITY AND SERVICE CLUBS

Teachers who remained belonged to community and service clubs in significantly greater proportion than did teachers who left.

INTEREST IN ANOTHER BUSINESS OR PROFESSION WHILE TEACHING VOCATIONAL AGRICULTURE

A much larger percentage of the teachers who remained reported interests in other occupations while teaching than did those who left. Farming accounted for the largest number of outside occupations for those who remained as well as for those who left. Of those who remained, 37.0 per cent were farming as compared with 19.5 per cent of those who left. Business, related and not related to agriculture, was engaged in by 29.6 per cent of those who remained and by only 3.9 per cent of those who left. Non-teaching jobs occupied the outside

time of 26.0 per cent of those who remained and of only 7.5 per cent of those who left. The difference of percentage of those who had outside employment in the two groups was significant.

OCCUPATIONS AFTER TEACHING OF THOSE WHO LEFT TEACHING OF VOCATIONAL AGRICULTURE

The occupations entered by those who left teaching of vocational agriculture included occupations in agencies of the United States Department of Agriculture such as: Soil Conservation Service and Farmers' Home Administration; employment by the College of Agriculture and extension service; county agent; 4H club agent; college teaching; graduate work; farming; or military service.

Present positions of teachers who left include farming, employment by commercial and cooperative organizations, employment by agencies of the United States Department of Agriculture such as Soil Conservation or Farmers' Home Administration, county agent and 4H club agent, other school work, agricultural college teaching, extension specialist, and miscellaneous occupations.

Of the teachers who left, 89.5 per cent were engaged in agricultural work as of June 30, 1949, and 10.5 per cent were engaged in non-agricultural work. Also, 47.4 per cent were engaged in educational work and 52.6 per cent were engaged in non-educational work.

GROWTH CURVES OF TEACHERS OF VOCATIONAL AGRICULTURE

Teachers can be measured for specific items which are indicative of growth. By comparing curves showing the growth of an individual teacher for a specific item with the pattern of growth curves of a number of similar teachers, the progress of the individual teacher can be determined in terms of the group with which he is being compared.

CHAPTER VII

CONCLUSIONS, RECOMMENDATIONS, AND SUGGESTIONS FOR FURTHER STUDY

The purpose of this study is to discover factors which are associated with decisions of teachers to leave, or to remain in, the field of teaching vocational agriculture. It was stated on page 9 that discovery of the association of these factors should be of value (1) to teacher-educators in helping them with selection of desirable students in agricultural education, (2) to students in helping them determine what factors may cause them to remain in or to leave the field of teaching vocational agriculture, (3) to teacher-educators, supervisors, and school superintendents in helping them discover factors in their programs which cause teachers to remain in the profession, and (4) to teacher-educators, supervisors, administrators, and students in helping them study growth of teachers in-service.

The present chapter will: (1) describe the implications of the present study, (2) list the major conclusions, (3) make recommendations which may be used as the basis for further action by teacher-educators, supervisors, and school administrators, and (4) make suggestions for further study.

IMPLICATIONS OF THE STUDY

The present study was confined to Michigan teachers of vocational agriculture who began teaching in the five-year

period from July 1, 1936 to June 30, 1941. All were graduates of Michigan State College. If application of findings is made to other situations, recognition should be given to these limitations. Conditions in schools, as well as conditions of employment, vary with changes in economic, social and political conditions. As a result, it is possible that findings of a study such as the present one, which might be made at a different time and covering a different geographic area, would produce somewhat different results.

Teacher-educators, and others interested in the program of vocational education in agriculture need to develop techniques for the selection of students, so that they will be able to secure high quality candidates for teachers of vocational agriculture who will remain in the profession for reasonably long periods of time. Techniques also need to be developed which will encourage teachers of vocational agriculture to remain in the profession. These not only involve the selection of candidates for qualifying experiences, but also the development of conditions in the local school which will be satisfying to the teachers and which will encourage them to remain.

Two implications are apparent in this study which are of concern to teacher-educators, state supervisors of vocational education in agriculture, and local school administrators. The

first has to do with the selection of students in agricultural education who have characteristics indicating that they will be likely to remain in the field of teaching vocational agriculture for a reasonably long period of time.

The second has to do with the development of programs in local schools. Supervisors and school administrators need to aid in the development of programs in the local school which will be attractive to teachers in terms of size of enrollment in all-day classes, fewer non-vocational classes, a reasonable degree of job security, and a favorable attitude toward the department on the part of the school administrators, teachers, and pupils. Vocational education in agriculture will not perform its best function in communities where it is being directed by a poor teacher or by one who remains for a short period of time.

CONCLUDING STATEMENTS

1. Individuals who later become teachers of vocational agriculture display certain evidences of interest in teaching as compared with evidences of interest in technical agriculture prior to entering training for teaching vocational agriculture. These evidences may be used as a means of helping to select students in agricultural education.

2. Individuals who later become teachers of vocational agriculture display certain characteristics in terms of

activities in college which are associated with their leaving or remaining in the field of teaching vocational agriculture. A study of these characteristics may be included in a program of selection of students for courses in agricultural education.

3. At the college level, greater age is associated with remaining in teaching vocational agriculture.

4. Participation in professional organizations by teachers seems to be associated with their remaining in the field of teaching vocational agriculture.

5. Earning technical and professional credits beyond the Bachelor's Degree at Michigan State College is more characteristic of those who remain in the field of teaching vocational agriculture than of those who leave.

6. There are factors in the high-school situation in which teachers of vocational agriculture are employed which are associated with the decision they will make to remain in, or to leave the field of teaching vocational agriculture.

7. Increased opportunity for advancement, and a greater feeling of security on the part of the teachers are associated with the decisions of teachers to remain in or to leave the field of teaching vocational agriculture.

8. A significantly larger number of teachers who remained had outside work while teaching than did those who left. This situation is one which needs much further study.

9. Items representing factors in the growth of teachers in-service can be plotted to show general patterns of growth which are followed by teachers who left and by those who remained.

RECOMMENDATIONS

1. Responsibility for the selection and training of students of agricultural education.

Teacher-educators and counselors of students should help students to analyze their interests so that they will make a wise choice of a field of training while in college and not be faced with the problem of changing to another occupation after a few years of teaching vocational agriculture. In the selection of students of agricultural education, consideration should be given to the evidence of interest in teaching as contrasted with evidences of interest in technical agriculture. It is not implied that teachers who are interested in technical agriculture will be likely to leave the field of teaching vocational agriculture, but rather that an interest in teaching seems to be associated with remaining in the field of teaching vocational agriculture.

To the extent that interest and ability can be measured at the pre-service level, students should be selected for qualifying experiences in agricultural education who will have an interest in teaching, who can enlist the cooperation and stimulate the accomplishment of pupils, and who are interested

in twelve months per year of employment with an opportunity for the outdoor work that is required of the teacher of vocational agriculture.

In the selection of students for preparation as teachers of vocational agriculture who possess the characteristics associated with remaining in the field, teacher-educators should recognize that: (1) membership in a social fraternity is not pre-requisite to remining in teaching of vocational agriculture, (2) that membership in college clubs and organizations is not associated with candidates most likely to remain, and (3) that membership in honorary fraternities may have some association, but needs further study before it should be associated with teachers remaining in or leaving the field of teaching vocational agriculture.

Older students who are seeking admission to training in agricultural education, are as likely to remain as teachers as those who enroll at an earlier age. Teacher-educators should not discriminate against these individuals on the basis of age.

Teacher-educators and counselors of students at the college level should help students determine as accurately as possible their professional attitudes toward the teaching of vocational agriculture, and base admission to training on a high level of professional standards. The study indicates that teachers are more likely to remain in teaching vocational

agriculture when they have relatively high enrollments in all-day classes, when they have fewer non-vocational classes, when they teach young-farmer or adult-farmer classes, and when they belong to professional organizations. A determination of interest in programs in vocational agriculture on the part of students seeking admission to training, should be helpful in selection of desirable students.

Since earning credits beyond the Bachelor's Degree seems to be associated with remaining in the field of teaching vocational agriculture, it is desirable for the teacher-educating institution to make it possible for teachers of vocational agriculture to take courses for credit. Administrators and state supervisors of agricultural education should find some means of making it possible for teachers of vocational agriculture to enroll in courses either in technical agriculture or professional courses at appropriate times during the year.

2. Responsibility for assistance with the program of vocational agriculture in the local school.

Administrators who wish to employ experienced teachers of vocational agriculture, should consider the status of the teacher in terms of his membership in professional organizations. Membership in the Michigan Education Association and in the Michigan Association of Teachers of Vocational Agriculture is associated with remaining in the profession of teaching

vocational agriculture. It will be recalled that membership in the Michigan Association of Teachers of Vocational Agriculture also includes membership in the Michigan Vocational Association and in the American Vocational Association.

School administrators, state supervisors, and others concerned with the organization of local schools should make sure that the departments of vocational agriculture are located in schools of sufficient size and in areas which will provide a program attractive to the teacher. The consolidation of small schools should be encouraged, so that departments of vocational agriculture in the school can meet at least the minimum standards of three all-day classes in vocational agriculture with an enrollment of more than 30 pupils and a program which will utilize at least 60 per cent of the teacher's time.

Young-farmer and adult-farmer classes should also be encouraged by school administrators and others. School administrators should adopt a program of vocational agriculture for the school which will include the teaching of these classes as well as all-day classes. Teacher-educators should assist teachers with plans for building courses and with methods and techniques of instruction which will enable them to conduct these programs more effectively.

The development of State Farmer candidates calls for

similar kinds of help from supervisors and teacher-educators. Teacher-educators and supervisors should organize and conduct pre-service and in-service programs for training of teachers which will help them develop successful State Farmer candidates.

The data indicate that teachers will be encouraged to remain in the field of teaching vocational agriculture if they can secure positions in which they will not be in conflict with the school administrators, where the salary will be commensurate with salaries in other schools as well as with salaries for positions outside the school which require similar training, and in locations in which the teacher will be satisfied to live.

School administrators who wish to employ experienced teachers likely to remain in the profession, should employ those who feel that their present program ranks well with pupils, other teachers, and school administrators.

Instruction should be provided by teacher-educators which will help teachers evaluate their program and help the teachers convey information regarding their program to student body, faculty, and administrators of the school.

A significantly larger number of teachers who remained had outside work while teaching than did those who left. This situation is one which needs further study. Do teachers who remain in the field of vocational education in agriculture

find it necessary to work outside of their school program to secure adequate income? Is the program of vocational agriculture one which occupies only a portion of the time and energy of the teacher? Is the amount of outside work only enough to substitute for recreation for the teacher and therefore, does it result in a better program of vocational agriculture in the school? Do teachers remain in teaching because of the outside work? These are questions which one is inclined to ask in this situation and which the present study cannot answer.

Any philosophy of vocational education in agriculture would include the statement that there is much more work to be done in the field of agricultural education than is being done at present. For example, it could be argued that teachers of vocational agriculture have hardly "scratched the surface" in the development of young-farmer and adult-farmer classes, and that the public school has a responsibility for carrying on educational programs for out-of-school groups in the community. It could also be shown that there are groups of people in certain areas who need instruction in agriculture, who are not now being served.

If this philosophy is sound, and at the same time teachers of vocational agriculture who remain in the field are spending their time on outside employment, then school administrators, supervisors, and teacher-educators should help teachers work out

programs to effectively utilize all of the energy of the teachers of vocational agriculture. At the same time provision for adequate salary should be made so that teachers would not be forced to seek outside employment for the purpose of securing adequate income.

In addition, administrators should determine if these outside interests affect quality of work of teachers. If it can be shown that quality of work is adversely affected by the outside employment, then remedial steps should be taken so that similar situations will not exist in the future. On the other hand, if it is shown that outside employment actually results in a better program of education in vocational agriculture in the school, then teachers should be encouraged to secure outside employment of a kind which will result in improved programs of education in the school.

Many of the conclusions which have been stated in previous sections of this report involve aspects of teacher growth. For example, if teachers are growing in terms of their abilities and interests in the teaching of vocational agriculture in a community, then evidences of the growth are likely to appear in terms of more young-farmer and adult-farmer classes, a greater percentage of time spent on vocational agriculture, fewer non-vocational classes, and in larger enrollments in all-day classes in vocational agriculture.

Patterns showing growth of teachers such as those in Figures 17 to 26 should be developed and kept up to date so that teacher-educators and others can measure the progress of an individual teacher in terms of the pattern and see where he is showing evidence of greater or less progress than the general pattern shows.

The number of items which reflect growth of teachers in service could be expanded. Much additional study is needed to determine what items can be used which will represent growth of teachers of vocational agriculture and to develop new uses for the data when they are compiled.

SUGGESTIONS FOR FURTHER STUDY

What factors are associated with success of the teacher of vocational agriculture and with his decision to leave or to remain in the field, are questions which have constantly confronted the writer as this study was in progress. As a one-time state supervisor of vocational education in agriculture, the writer formed the habit of thinking, "This man is a superior teacher," or "This man is a poor teacher and ought to find some other occupation." The judgments may not have been correct; however, a study should be made which would help determine whether teachers leave because they are highly successful teachers and therefore had opportunities to serve more people in another field, or whether they leave more often

because they are poor teachers and the competition is too keen for them.

What are the selective factors at work which influence the retention or dismissal of teachers of vocational agriculture? Anderson[92] states that poor teachers are eliminated through recognition of their own shortcomings or through competition from better teachers. There has seldom been a year in Michigan since 1918 when there were enough teachers of vocational agriculture available to meet the demand at the current salary. Under these conditions, competition is at a minimum and yet many teachers leave the field each year. A study is needed to determine what factors cause boards of education and school administrators to dismiss a teacher of vocational agriculture.

What can be done by state supervisors, teacher-educators, and local administrators of schools to attract and hold more of the better teachers of vocational agriculture? The present study has shown some of the factors which are associated with the decisions of teachers to leave the field of teaching vocational agriculture. The above question involves another side of the problem, having to do with the over-all program of vocational education in agriculture, and with the local

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[92] Anderson, op. cit., p. 10.

school situation which facilitates or hinders the development of the work of the teacher of vocational agriculture.

What is the influence of outside employment of the teacher of vocational agriculture on the development of the program of vocational agriculture in the community where the teacher is employed? The answer to this question will require much work. The extent of outside employment, the time used by teachers in directing farming or business enterprises in which they have an interest but which they are not operating, and a determination of the effect on the program of vocational agriculture of more or less outside employment will all need to be considered in dealing with this problem.

What is the effect of farming background and experience on the success or failure of the teacher of vocational agriculture? What is the effect of the same factors on the retention or dismissal of teachers of vocational agriculture? The question as to degree of success of teachers of vocational agriculture as related to the quality of farm practices which made up the farm experience of the teachers needs to be explored. Also, the problem of the effect of the type of farming in which the farm experience was secured and its influence on future success or failure needs to be further studied for the purpose of making possible better selection of trainees in agricultural education.

Is there an association between the socio-economic status of the individual and his decision to leave or to remain in the field of teaching vocational agriculture? Is there a relationship between financial backing which an individual may have and his leaving teaching for business or farming? Is there a relationship between the occupational, social, and economic status in which the individual lived while in high-school and college and the occupational history of the individual after graduation from college? Answers to these kinds of questions might provide additional information regarding the causes of teachers leaving the profession for which they were trained while in college.

What factors contribute to the ranking of a department of vocational agriculture in a school on the part of the pupils, the teachers, and the school administrators? In this study a significantly larger number of teachers who remained in teaching ranked their departments "good" than of those who left. Did these departments rank "good" because of teaching methods used by the teacher, because of the public relations program of the teacher, because of the attitude of parents toward the total school program, or because of other factors? A determination of the factors affecting the standing of a department of vocational agriculture would be helpful to

teachers and others in offering a program more nearly adjusted to the interests and needs of the people they are attempting to serve.

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APPENDIX

A. Plans of admission to Michigan State College, quoted from Michigan State College Catalog of March, 1936.

B. Copy of questionnaire sent to present and former teachers of vocational agriculture who were used in the study.

C. Copy of form used for recording data from the State Board of Control for Vocational Education.

D. Copy of form used for recording data from the Office of the Registrar and the Office of the Board of Examiners, Michigan State College.

E. Copy of the form used for recording data from the Office of Alumni Relations, Michigan State College.

F. Copy of typical letter which accompanied the questionnaire.

G. Copy of the first reminder letter requesting return of the questionnaire.

H. Copy of the second reminder letter requesting return of the questionnaire.

I. Graphs showing the patterns of growth for teachers who left and those who remained, using the following as criteria.

   1. Salary by years.
   2. Enrollment in all-day classes.
   3. Per cent of time spent on vocational agriculture, by years.

4. Number of State Farmers by years.

5. Number of young-farmer and adult-farmer classes by years.

A

COPY OF REQUIREMENTS FOR ADMISSION TO MICHIGAN STATE COLLEGE

The following is quoted from the Catalog of Michigan State College for March, 1936:

> The requirements for admission to the various curricula were recently revised, the new plan becoming effective September, 1935. However, candidates for admission may have a choice of either the old requirements or the new requirements until September, 1937, when the new plan becomes exclusively effective . . .
>
> **Old Plan of Admission**
>
> Graduates of approved high schools who meet the requirements as set forth and are recommended are admitted to our four year courses without examination.
>
> The college requires that all such applicants present fifteen acceptable units for admission -- a unit meaning a subject pursued throughout a school year, with not less than four recitation periods each week. The requirements for the different courses are as follows:
>
> For admission to courses in Agriculture, Forestry, . . . the applicant must offer the following units:

English 3 units	Plane Geometry 1 unit
Algebra 1 unit	Group 1, four units or more
	Group 2, six units or less

> Group 1:
> From this group four units must be chosen, the number of credits accepted being shown:

English	1 unit	General science	1/2 or 1 unit
Mathematics	1 unit	Geology	1/2 or 1 unit
Physics	1 unit	History 1,2,3, or	4 units
Zoology	1/2 or 1 unit	Language 2,3, or	4 units
Physiology	1/2 or 1 unit	Economics	1/2 or 1 unit
Botany	1/2 or 1 unit	Geography	1/2 or 1 unit
Physiography	1/2 or 1 unit		

Group 2:

Six units may be taken from this group for all courses except engineering . . .

This group is made up of all subjects not included in Group 1 which are accepted for graduation by accredited high schools, except that not less than two units of any one language will be accepted, nor does the college accept Physical Training, Penmanship, Military Training or Scholarship.

New Plan of Admission

Graduates of a Four-Year Accredited High School. A minimum of fifteen units is required for admission for graduates of an accredited four-year high school. Among these must be included certain major and minor sequences selected from the six groups of subjects listed below, a major sequence consisting of at least three units and a minor sequence consisting of at least two units.

No more than one of the required sequences will be accepted from any one group except group B where sequences may be offered in each of two languages.

A minimum of four sequences must be presented, two of which shall be major sequences. For all Divisions and curricula of the College, one major sequence must be from group A, and a major or minor from Group B or C or D.

The groups are listed as follows:

Group A English (and speech)
Group B Foreign language group
Group C Mathematics group
Group D Science group
Group E Social Studies group
Group F Vocational Studies group[93]

The curricula for agriculture and forestry further specified that a major or minor sequence must be presented from Group C, the Mathematics group.

---

[93] Michigan State College Catalog, (Bulletin of Michigan State College of Agriculture and Applied Science, Catalog Number Vol. XXX, No. 9, pp. 33-35, East Lansing, Michigan: Michigan State College, 1935) pp. 33-35.

B

COPY OF THE QUESTIONNAIRE WHICH WAS SENT TO TEACHERS OF VOCATIONAL AGRICULTURE

A Study of Factors Associated with Decisions of Michigan Teachers of Vocational Agriculture to Remain in or to Leave the Field of Teaching Vocational Agriculture.

Questionnaire

Name _____ Address _____

I. Schools in which vocational agriculture was taught and reasons for your changing schools. If more space is needed, use other side of page.

A. Name of first school _____

Your reason for changing _____

B. Name of second school _____

Your reason for changing _____

C. Name of third school _____

II. A. For teachers who have left the teaching of vocational agriculture.

Check the following items as to their importance in causing you to decide to leave the teaching of vocational agriculture. Rate each item in the list by placing a check in the proper column.

B. For teachers who are still teaching vocational agriculture.

Check the following factors which have been involved in your decision to remain in teaching to the present time. Indicate the relative importance of each item by checking in the proper column. Check every item.

	Major factor	Minor Factor	No Bearing
1. Opportunity			
2. Interest in teaching			
3. State supervision . .			

	Major Factor	Minor Factor	No Bearing
4. State reports			
5. Salary			
6. Project supervision . . .			
7. Amount of work			
8. Security			
9. Summer work			
10. Accomplishment of students			
11. Social prestige			
12. Cooperation of pupils . . .			
13. Jealous teachers			
14. Teachers' meetings			
15. Athletic events			
16. P.T.A. meetings			
17. Housing for faculty . . .			
18. Community pressures (attendance at church, etc.)			
19. Community contributions (salary)			
20. Petty politics			
21. Family preference			
22. Teaching vocational agriculture a stepping stone			
23. Routine school duties . . .			
24. Twelve month job			
25. Outdoor work			
26. Opportunities to advance			

III. Teacher's opinion of his program of teaching vocational agriculture

Following is a list of items which may be used to assist you in describing your own program. Please check each item in the proper column, indicating a rating of good, medium or poor.

	Good	Medium	Poor
1. Pupils made good use of their time in the classroom			
2. Pupils exhibited interest in classroom work			
3. Pupils exhibited interest in supervised farm practice work			
4. Pupils exhibited interest in F.F.A. work			
5. The department ranked well in the total school program			
6. The department ranked well with the other teachers			
7. The department ranked well with the administrators.			

IV. Occupational history after leaving the field of teaching vocational agriculture. If additional space is needed, use other side of the page.

1. First position _____

2. Second position _____

3. Third position _____

V. Participation in professional or farm organizations.

1. Have you ever been a member, committee member, or officer in the Michigan Education Association (either state or district)?

a. What years were you a member? _____

b. Of what committees were you a member?_____

Dates of each _____

c. What offices have you held? _____

Dates of each _____

2. Have you ever been a member, committee member, or officer in the local teachers club?

a. What years were you a member? _____

b. Of what committees were you a member? _____

Dates of each _____

c. What offices have you held? _____

Dates of each _____

3. Have you ever been a member, committee member, or officer in the Michigan Association of Teachers of Vocational Agriculture?

a. What years were you a member?_____

b. Of what committees were you a member? _____

Dates of each _____

c. What offices have you held? _____

Dates of each _____

4. Have you ever been a member, committee member, or officer in the Farm Bureau?

a. What years were you a member? _____

b. Of what committees were you a member? _____

Dates of each _____

c. What offices have you held (local)?_____

Dates of each _____

d. What offices have you held? (State) _____

Dates of each _____

5. Have you ever been a member, committee member, or officer in the Grange?

a. What years were you a member? _____

b. Of what committees were you a member? _____

Dates of each _____

c. What offices have you held? _____

Dates of each _____

VI. Participation in civic organizations or service clubs.

1. In what civic organizations or service clubs have you held membership while teaching vocational agriculture?

_____ Dates of membership _____

2. Of what committees were you a member? _____

Dates of each _____

3. What offices have you held? _____

Dates of each _____

VII. Did you attend college at another institution prior to enrolling at Michigan State College? Yes _____ No _____

Name of institution _____

Of what student organizations were you a member? List under proper headings:

Social organizations	Service organizations	Honorary organizations
1	1	1
2	2	2

Professional organizations	Other organizations
1	1
2	2

VIII. Did you take graduate work at another institution prior to leaving the field of teaching vocational agriculture?

Yes ____ No ____ Name of institution _____

Field work _____ Number of credits earned _____

IX. Development of a business or profession while teaching vocational agriculture.

1. Were you an owner (not operating) of a farm while teaching vocational agriculture? Yes _____ No _____

2. Size of farm _____ Type of farm _____ Location _____

   Were you an operator of a farm while teaching vocational agriculture? Yes ___ No ____ Size of farm _____

   Type of farm _____ Location _____

3. Were you an owner and/or operator of a business related to agriculture while teaching vocational agriculture? Yes _____ No _____

   Kind of business _____ Where _____

4. Were you an owner and/or operator of a business not related to agriculture while teaching vocational agriculture? Yes _____ No _____

   Kind of business _____ Where _____

5. Were you studying for or practicing another profession while teaching vocational agriculture? Yes ___ No ____

   Kind _____ Studying _____ Practicing _____

6. Did you work part-time at a non-teaching job while teaching vocational agriculture? Yes ____ No _____ Kind _____.

X. History while enrolled as a student at Michigan State College.

1. Social organizations in which you held membership while in college.

   a. Were you a member of a fraternity? Yes ___ No ____

   b. Were you a member of the Independent Students Association? Yes ____ No ____

   c. Were you a member of the Y.M.C.A. Yes ___ No ____

   d. Other social organizations of which you were a member. (List)

   _____, _____, _____, _____

2. Service organizations in which you held membership while in college.

   a. Agronomy club _____ c. Dairy Club _____

   b. Block and Bridle _____ d. Agr. Engineering ____

   Others (list) _____, _____, _____

3. Honorary organizations in which you held membership while in college. Alpha Zeta _____
   Others (list) _____

4. Professional organizations in which you held membership while in college.

   a. Agricultural Education Club ____ Others (list) _____

5. Other organizations in which you held membership while in college.

   a. Y.M.C.A. _____

   b. Christian Student Foundation _____

   c. Newman Club _____

   d. Lutheran Student Club _____

   Others (list) _____

C

COPY OF FORM USED FOR RECORDING DATA FROM THE STATE BOARD OF CONTROL FOR VOCATIONAL EDUCATION

Factors Associated with Decisions of Teachers of Vocational Agriculture to Remain in or to Leave the Field of Teaching Vocational Agriculture

Data from the Office of Vocational Education

Name _____

Number of State and American Farmers by years

Year	No. State Farmers	No. American Farmers	Year	No. State Farmers	No. American Farmers
1936			1943		
1937			1944		
1938			1945		
1939			1946		
1940			1947		
1941			1948		
1942			1949		

Program and salary of the teacher

Year	School	No. all-day classes No. Enroll.	No. P.T. classes	P.T. enrollment	No. adult classes	Adult Enrolment	Time on voc. agr.	Salary
1936								
1937								
1938								
1939								
1940								
1941								
1942								
1943								
1944								
1945								
1946								
1947								
1948								

D

COPY OF FORM FOR RECORDING DATA FROM THE OFFICES OF THE REGISTRAR AND FROM THE OFFICE OF THE BOARD OF EXAMINERS, M. S. C.

Factors Associated with Decisions of Michigan Teachers of Vocational Agriculture to Remain in or to Leave the Field of Teaching Vocational Agriculture.

Name of Teacher _____ Home address while in college _____

Date of Birth _____ Name of H.S. _____ Date graduated _____

High school record:

Subject	Units	Subject	Units	Subject	Units
English		Chemistry		Civics	
Speech		Biology		Social Probs.	
Journalism		Botany		Home Economics	
Dramatics		Zoology		Agriculture	
Latin		Geology		Commercial	
French		Physiology		Industrial Arts	
German		General Sci.		Music	
Spanish		History		Misc'l.	
Algebra		Economics			
Geometry		Government			
Trigonometry		Geography			
Physics		Sociology			

Rank in H.S. graduating Class _____ Size of Class _____

College record: Date of matriculation _____ B.S. Degree _____
M.S. Degree _____

All-college Grade-Point Ratio _____

Major Technical Agr. Courses, Number of Credits, and mark for each:

Course	Credits	Mark	Course	Credits	Mark

Grade-point ratio of major technical agriculture courses _____

List Professional Courses taken as an under graduate, number of credits, and mark in each:

Course	Credits	Mark	Course	Credits	Mark

Grade point ratio of professional courses ____ Student teaching ____

Freshman Week Test Scores:

Test	Decile	Test	Decile

Professional courses taken since graduation from M.S.C. (At M.S.C.)

Course	Credits	Mark	Course	Credits	Mark

Technical Courses Taken since Graduation from M.S.C. (At M.S.C.)

Course	Credits	Mark	Course	Credits	Mark

Other courses taken since graduation from college at M.S.C. (at M.S.C.)

Course	Credits	Mark	Course	Credits	Mark

Fraternity _____

Transfer from _____ Credits transferred _____

E

COPY OF FORM USED FOR RECORDING DATA FROM THE OFFICE OF ALUMNI RELATIONS, MICHIGAN STATE COLLEGE

Name _____ Class and course _____ Years in Attendance ____
Date of Graduation _____

Degrees _____ Societies and Other Activities _____

_____ _____

Home Address _____ _____

Date	Occupation	Business address	Residence Address

F

COPY OF TYPICAL LETTER WHICH ACCOMPANIED THE QUESTIONNAIRE

RAYMOND M. CLARK
222 ORCHARD STREET
EAST LANSING, MICHIGAN

December 27, 1949

Mr. _____ _____
_____
_____
(city), (state)

Dear _____

I want to congratulate you on the new job. At least it appears new since you were in the Vocational Office in Lansing a year or two ago.

I have enclosed a questionnaire which I am circulating among a few former teachers of vocational agriculture to try to discover why some leave the profession and why others stay at teaching most of their lives. I expect to use the results in a thesis at Michigan State College. Some of the information has been inserted in your questionnaire in red, which I had found in college and alumni office records. I shall appreciate it very much if you will complete the questionnaire and return it to me as soon as possible.

Very truly yours,

Raymond M. Clark

G

COPY OF FIRST REMINDER LETTER REQUESTING RETURN OF QUESTIONNAIRE

RAYMOND M. CLARK
222 ORCHARD STREET
EAST LANSING, MICHIGAN

February 14, 1950

Mr. _____ _____
_____, _____

Dear _____

I am very anxious for the return of the questionnaire which I sent you on January 30. I know how busy you must be, but I am also anxious to have 100 per cent return on my questionnaires as they were sent to a limited number of people and to those who would have a contribution to make which would help others decide whether or not to choose teaching of vocational agriculture as a vocation.

I hope it will be possible for me to get up to _____ county some time later when I can look you up. However, in the mean time I shall be interested in hearing from you.

Thanks for your help and cooperation on this project.

Sincerely,

Raymond M. Clark

H

COPY OF SECOND REMINDER LETTER REQUESTING RETURN OF QUESTIONNAIRE

RAYMOND M. CLARK
222 ORCHARD STREET
EAST LANSING, MICHIGAN

April 7, 1950

Mr. _____, _____
_____, _____

Dear _____

I am enclosing another questionnaire form since I assume the first one I sent you on February 21 has been mislaid. I have returns from all but five former teachers of vocational agriculture and am making an effort to get 100% return.

I shall appreciate hearing from you and receiving the questionnaire as soon as possible.

Thanks for your help and cooperation.

Sincerely,

Raymond M. Clark

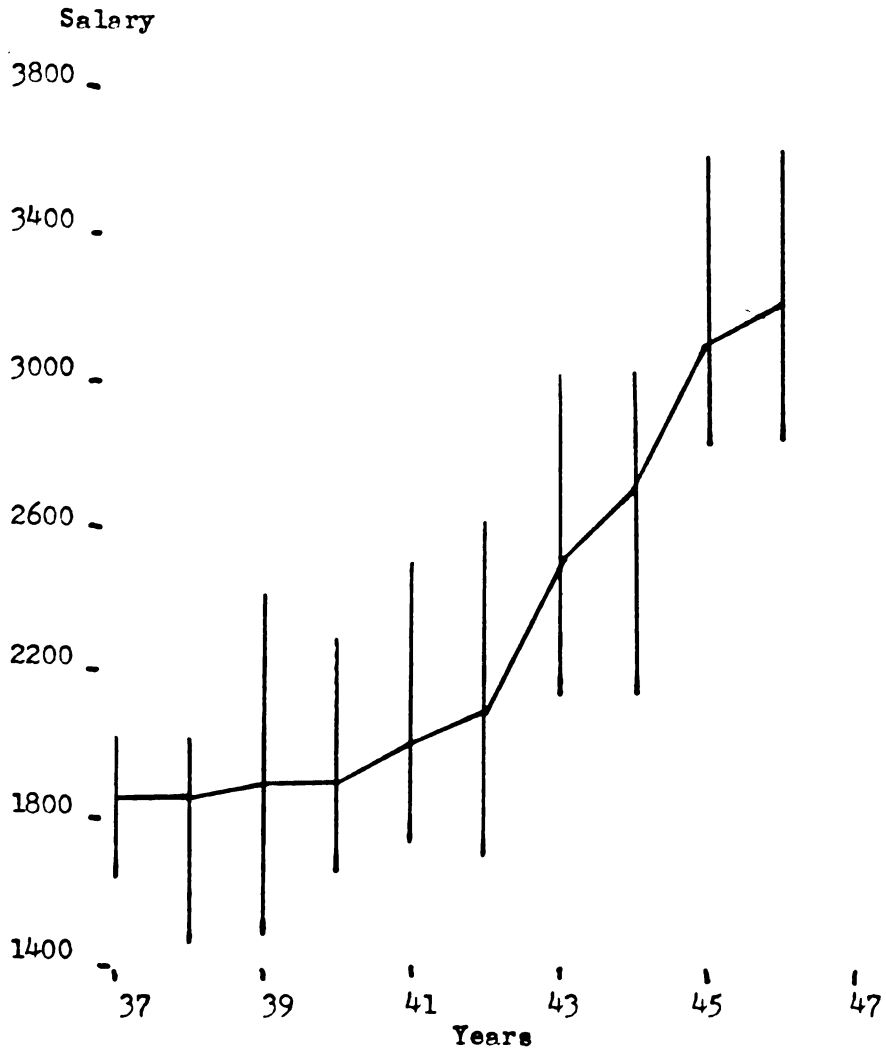


FIGURE 17

MEAN SALARY AND RANGE OF SALARIES OF TEACHERS WHO LEFT BY YEARS

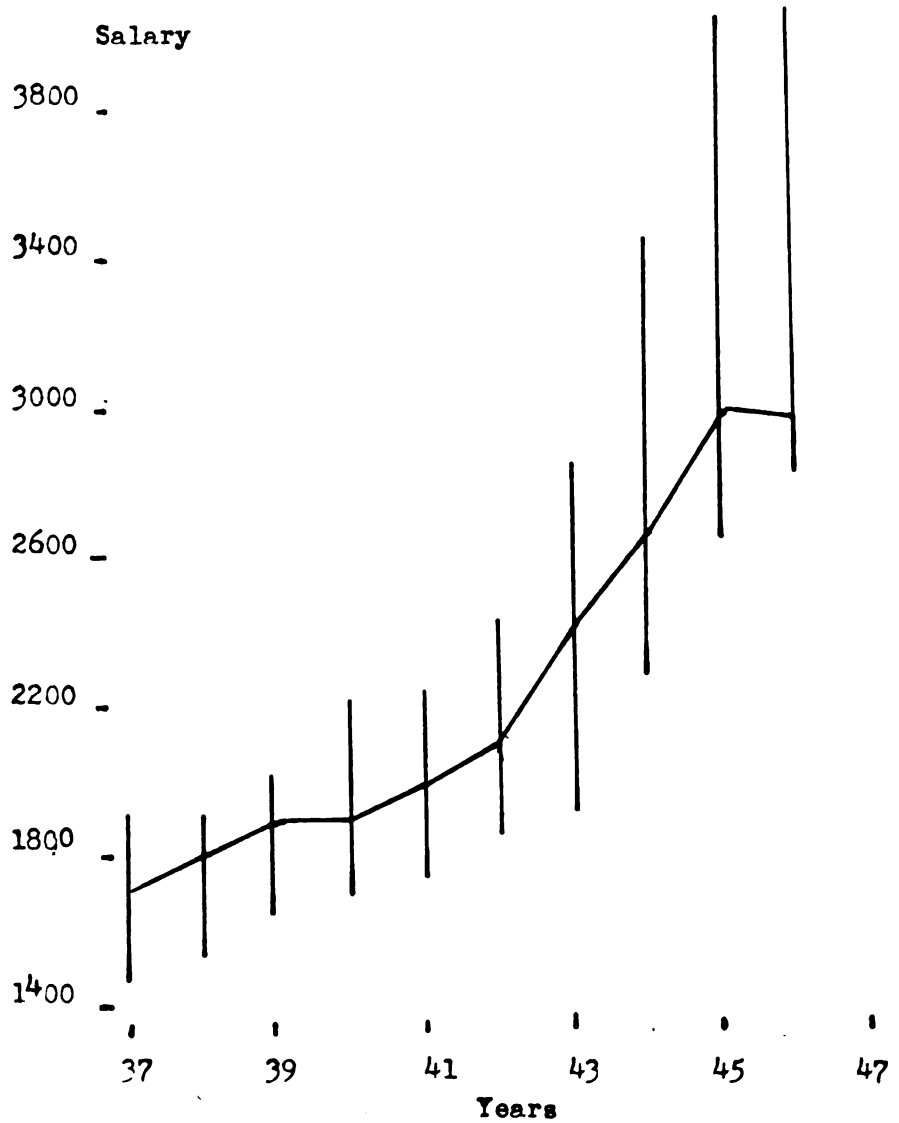


FIGURE 18

MEAN SALARY AND RANGE OF SALARIES OF TEACHERS WHO REMAINED, BY YEARS

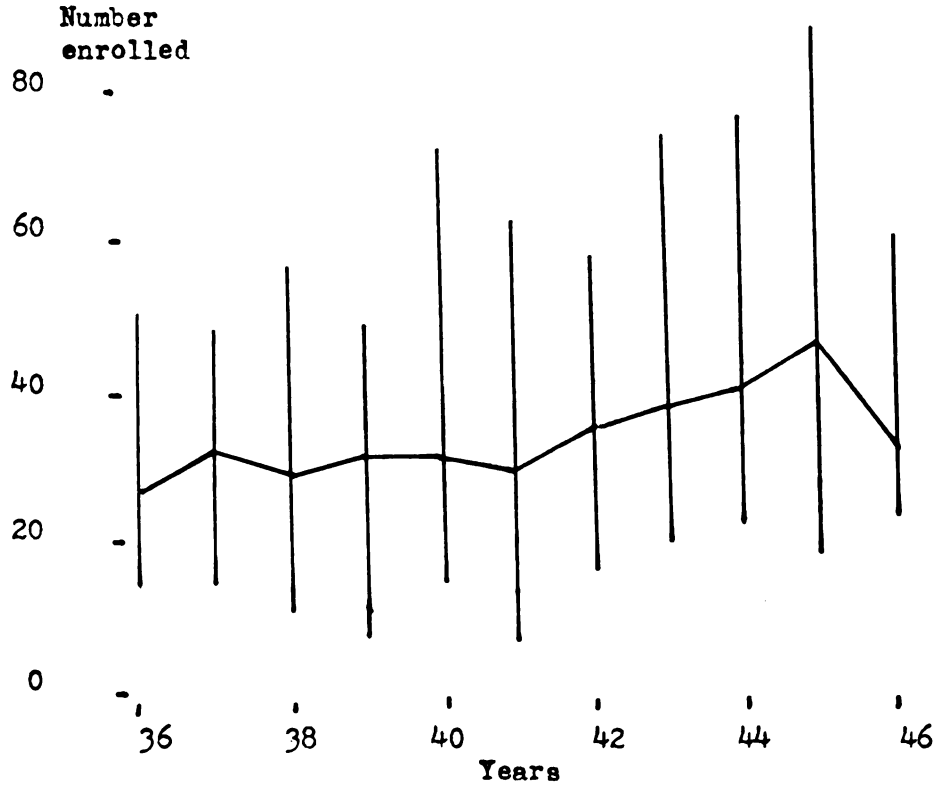


FIGURE 19

MEAN ENROLLMENT AND RANGE OF ENROLLMENTS IN ALL-DAY CLASSES TAUGHT BY TEACHERS WHO LEFT, BY YEARS

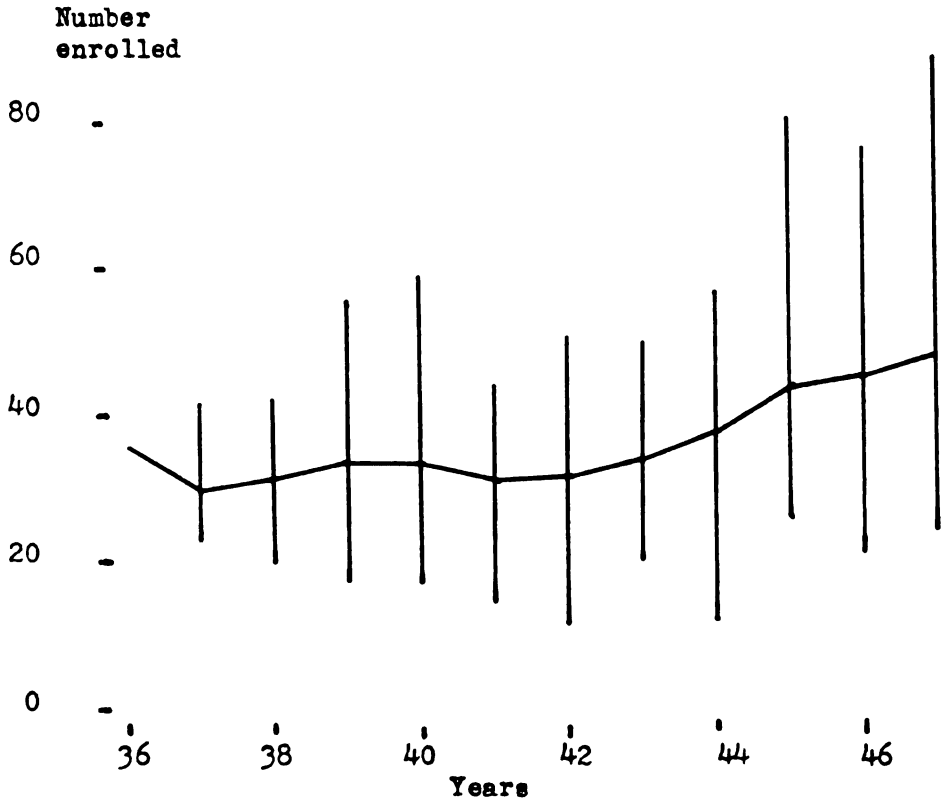


Figure 20

MEAN ENROLLMENT AND RANGE OF ENROLLMENTS IN ALL-DAY CLASSES TAUGHT BY TEACHERS WHO REMAINED, BY YEARS

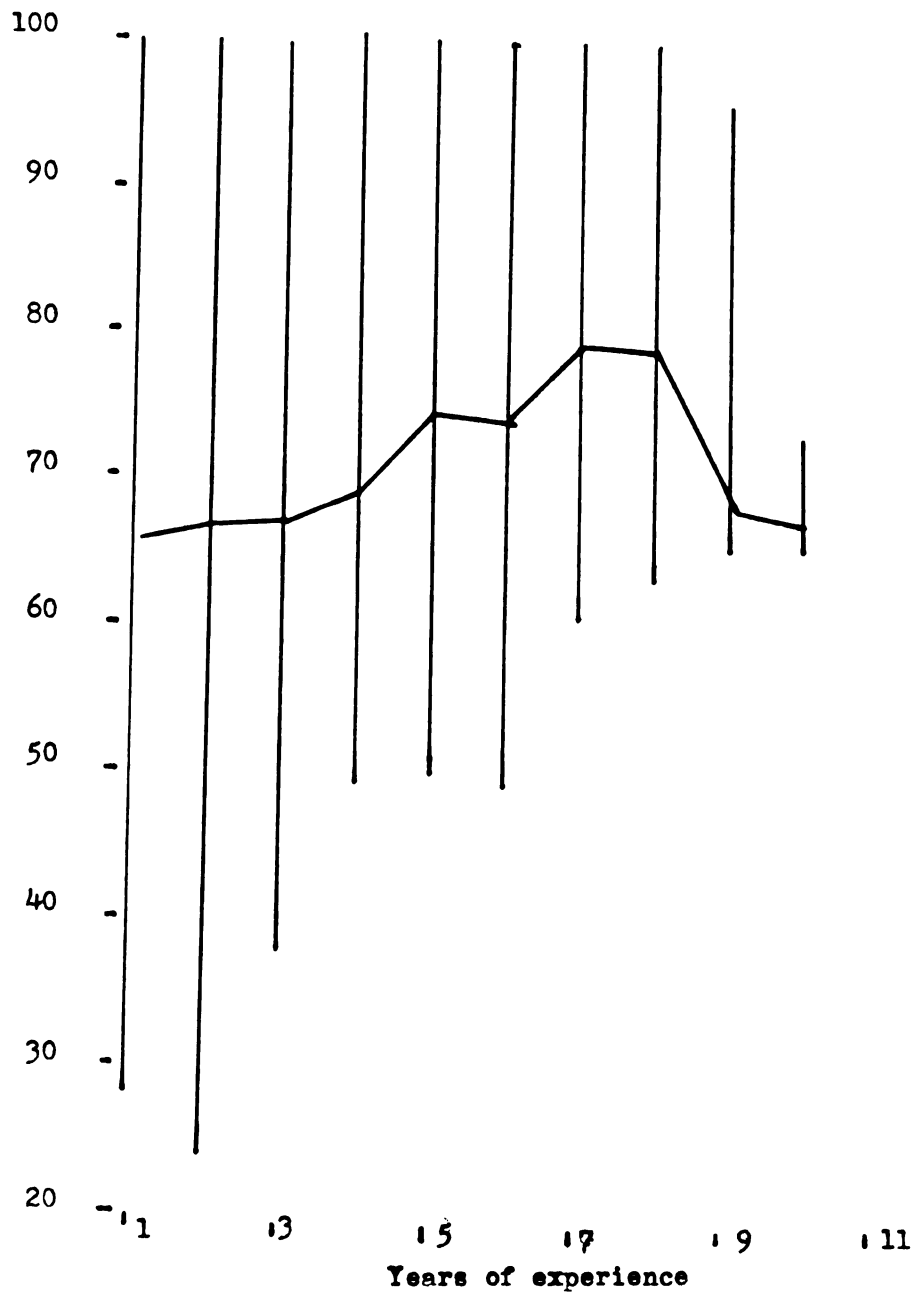


FIGURE 21

MEAN PERCENTAGE AND RANGE OF PERCENTAGES OF TIME SPENT ON VOCATIONAL AGRICULTURE BY TEACHERS WHO LEFT, BY YEARS OF TEACHING EXPERIENCE

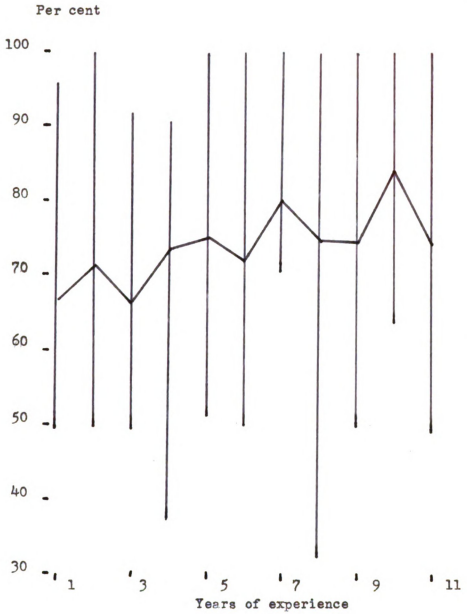


FIGURE 22

MEAN PERCENTAGE AND RANGE OF PERCENTAGES OF TIME SPENT ON VOCATIONAL AGRICULTURE BY TEACHERS WHO REMAINED, BY YEARS OF TEACHING EXPERIENCE

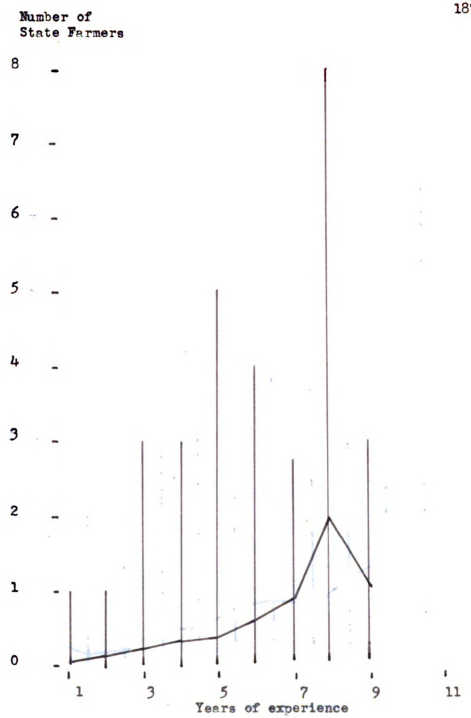


FIGURE 23

MEAN NUMBER OF STATE FARMERS PER TEACHER AND RANGE IN NUMBER OF STATE FARMERS PER TEACHER FROM SCHOOLS OF TEACHERS WHO LEFT, BY YEARS OF TEACHING EXPERIENCE

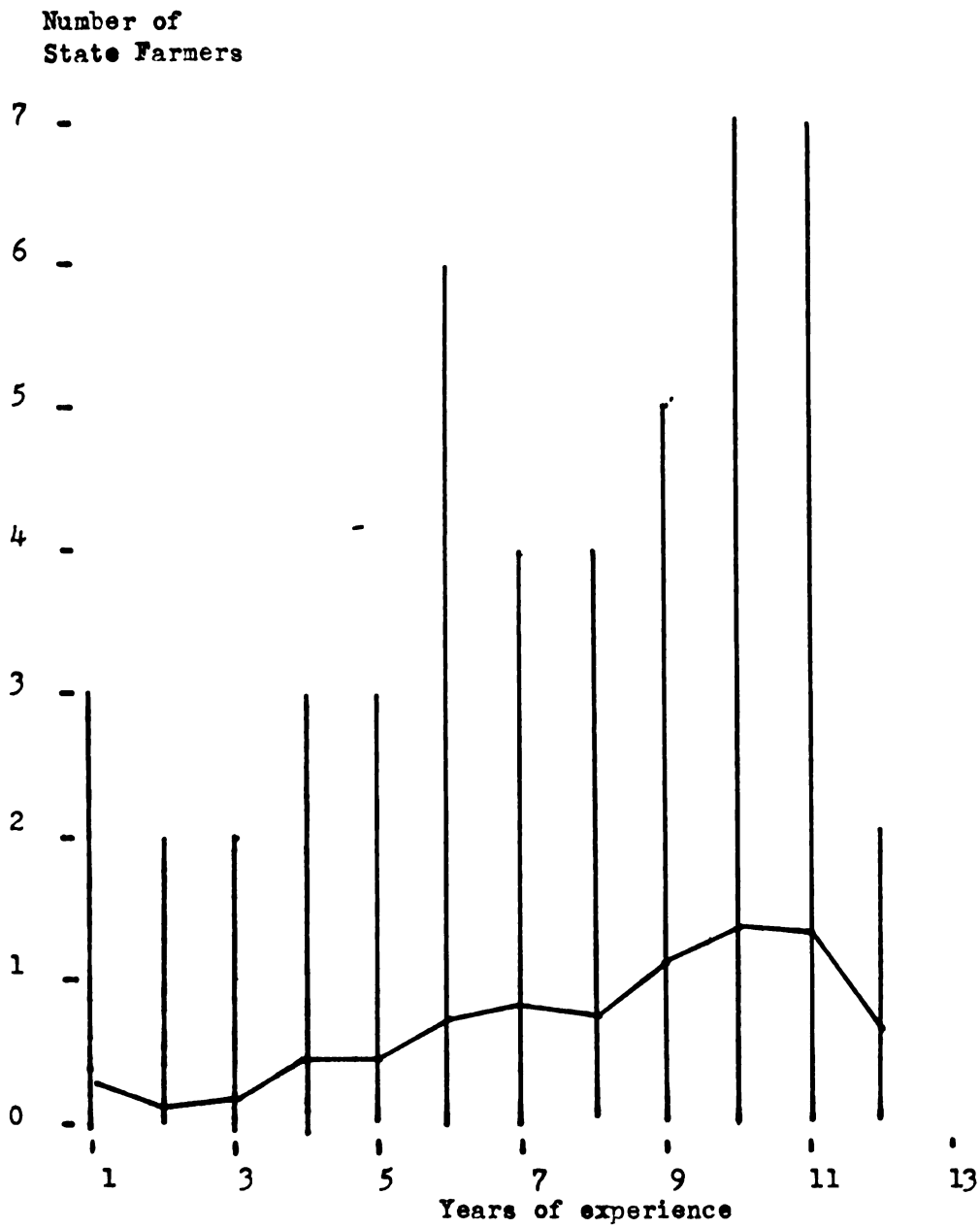
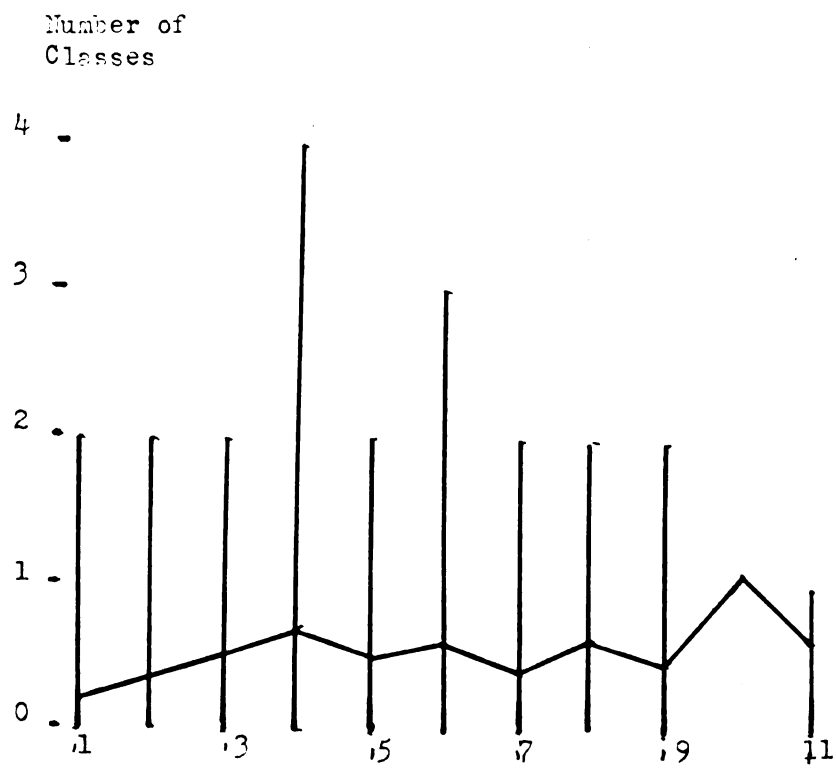


FIGURE 24

MEAN NUMBER OF STATE FARMERS PER TEACHER AND RANGE IN NUMBER OF STATE FARMERS PER TEACHER FROM SCHOOLS OF TEACHERS WHO REMAINED, BY YEARS OF TEACHING EXPERIENCE



- FIGURE 25

- MEAN NUMBER OF YOUNG-FARMER AND ADULT-FARMER CLASSES PER TEACHER AND RANGE IN NUMBER OF CLASSES PER TEACHER, BY YEARS OF TEACHING EXPERIENCE FOR THOSE WHO LEFT

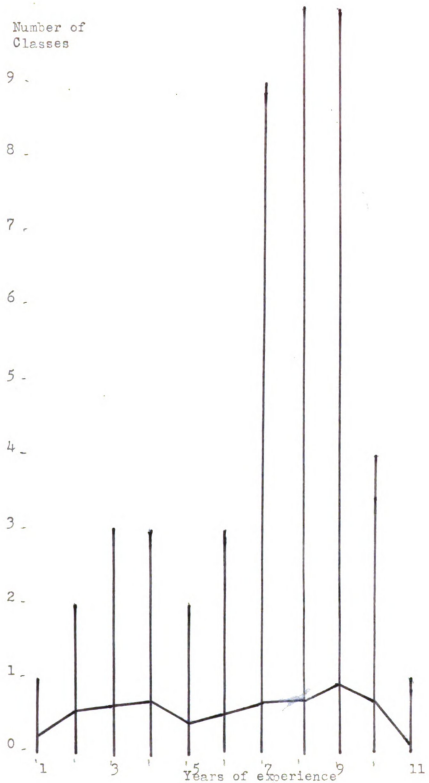


FIGURE 26

MEAN NUMBER OF YOUNG-FARMER AND ADULT-FARMER CLASSES PER TEACHER AND RANGE IN NUMBER OF CLASSES PER TEACHER, BY YEARS OF TEACHING EXPERIENCE FOR THOSE WHO REMAINED