AN ANALYSIS OF FACTORS ASSOCIATED WITH THE QUALITY, NATURE AND EXTENT OF FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

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Submitted to the Faculty of the Graduate School of
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in partial fulfillment of the requirements
for the degree of
DOCTOR OF EDUCATION
May, 1961

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ACKNOWLEDGEMENTS

Indebtedness is acknowledged to Dr. Robert R. Price who served as thesis advisor; and to Professor E. W. Schroeder, Dr. Richard Jungers, Dr. Roy Dugger, and Dr. J. C. Fitzgerald for the helpful advice and criticisms which they gave while serving as members of the doctoral committee.

Appreciation is also expressed to the following groups: the teacher-trainees in the Department of Vocational Agriculture at the Sam Houston State Teachers College for their cooperation concerning the student teachers and the student teaching centers; the twenty-seven supervising teachers of vocational agriculture in whose communities the data were gathered; and the forty-seven student-teachers of vocational agriculture who supplied a part of the basic data necessary for this study.

Appreciation is also expressed to Professor Maynard Yoes and to the other members of the agriculture faculty of Sam Houston State Teachers College for their cooperation, encouragement, and valuable suggestions.

Appreciation is sincerely expressed for the encouragement and assistance offered by my wife, Shirley, and my children, Sheri, Terrie, and Alan.

CHAPTER I

INTRODUCTION

The competencies needed by teachers of vocational agriculture have increased tremendously in recent years. This is due primarily to the increasing complexity of our society, to the advancements in technology, and to the mechanization in the production of farm commodities. One needs only to observe the operation of a modern-day farm to find ample evidence that today's agriculture is a highly mechanized industry.

Longhurst makes the following comments regarding America's changing agriculture:

> The output per man has doubled between 1940 and 1956 because of adopted power units, specialized harvesting machines, and all kinds of chore equipment. Since 1945, the number of new work-saving machines has increased 1,200 per cent. Most of these machines were not in existence in 1938. Tractors have tripled in numbers from 1938 to 1958. Today, we have an average of one and one-half tractors per farm in the United States. The use of all machinery has increased about 300 per cent in the last 20 years.[1]

Longhurst further indicates from a study of the 1958 United States Department of Agriculture Survey, that American farmers would spend eight billion dollars on tools and equipment to operate their farms, with most of the money being spent for the purchase of new or used machinery.[2]

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[1]Robert M. Longhurst, "A Dynamic Farm Mechanics Curriculum For A Changing Agriculture," Agriculture Education Magazine, XXXII, No. 7 (January, 1960), p. 160.

[2]Ibid.

Since the farms of today represent a substantial investment and are highly mechanized, it becomes imperative that farm people know how to use and maintain the mechanical facilities which they possess if they are to receive the maximum rewards from such mechanization.

Teachers of vocational agriculture have the responsibility to provide training in farm mechanics that will enable the maximum rewards from mechanization to be realized by those engaged in farming. Since a teacher of vocational agriculture has the responsibility of providing for training in farm mechanics, then it is only logical that he be highly trained in this area.

Leaders of vocational agriculture have for many years regarded the practice teaching period as being the strongest part of the pre-service training program of vocational agriculture. As stated by Fred G. Lechner,

> It has generally been recognized among vocational agriculture training personnel and student teachers that the student teaching period and/or apprenticeship period of the teacher program is probably the most effective and valuable phase of their training.[3]

Assuming this fact to be true, and acknowledging the importance of mechanization in farming, it then becomes of vital concern that student teachers of vocational agriculture be provided with the most desirable participating experiences possible in the area of farm mechanics.

Statement of the Problem

In view of the fact that agriculture today is a highly mechanized industry, and that student teaching is of great importance in the training of vocational agriculture teachers, this research was undertaken to

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[3]Fred G. Lechner, "Factors Influencing the Experiences of Student Teaching," Agriculture Education Magazine, XXV, No. 9 (March, 1953), p. 196.

identify and describe the factors associated with the quality, nature, and extent of farm mechanics experiences received by student teachers of vocational agriculture. The principle problem of the research study was to ascertain if certain selected factors common to vocational agriculture could be significantly associated with a student teaching program of farm mechanics.

Definition of the Terms

The term "farm mechanics experiences" is used in this research study to refer to the experiences received by student teachers in the following areas: (1) farm shop work, (2) farm power and machinery, (3) farm electrification, (4) farm buildings and conveniences, and (5) the engineering and mechanical phases of soil and water management. A class period of one hour duration, devoted to farm mechanics, shall constitute a farm mechanics experience.

The term "quality" refers to the rating or value assigned to the farm mechanics experiences received by the student teachers.

The term "nature" refers to the sum total of the circumstances surrounding the student teaching experiences.

The term "extent" refers to the number of farm mechanics experiences received by the student teachers of vocational agriculture while engaged in student teaching.

The term "factors" is used in the research study to refer to certain selected background characteristics of supervising vocational agriculture teachers, certain selected physical characteristics of the particular high schools in which the individual teachers were teaching, and certain selected economic characteristics of the service area of the school

districts which may be associated with the quality, nature, and extent of farm mechanics experiences received by student teachers of vocational agriculture.

The term "significant factor" is used in this research study to refer to those factors which, after appropriate statistical treatment of data, are found to be significantly associated at the five per cent level.

The term "student teacher" is used in this research study to refer to those students of vocational agriculture who are gaining experiences of teaching vocational agriculture in the secondary schools as a part of their pre-service training to qualify for a teaching certificate in vocational agriculture.

The term "supervising teacher" in this research study refers to the teacher of vocational agriculture in the secondary school who is primarily responsible for guiding the student teacher in his student teaching experiences.

The term "student teaching center" is used in this research study to refer to a cooperating school system, including the school service area, in which college students of vocational agriculture are engaged in student teaching.

Scope of the Study

This research project is concerned with the problem of ascertaining which of certain selected factors are associated to a greater degree with the quality, nature and extent of farm mechanics experiences received by student teachers of vocational agriculture.

The scope of this research study was limited to vocational agriculture students completing student teaching at Sam Houston State Teachers

College during the school year 1959-60. The scope of this research study was also limited to the student teaching centers of vocational agriculture used by the Agriculture Department of Sam Houston State Teachers College.

Basic Assumptions

This research study is conditioned by the following assumptions:

1. That student teachers of vocational agriculture receive varying degrees of participating farm mechanics experiences while engaged in student teaching.
2. That certain selected factors are associated in varying degrees with the quality, nature and extent of farm mechanics experiences received by student teachers of vocational agriculture, and that these factors can be identified.
3. That each vocational agriculture teacher interviewed in connection with the study is sufficiently well informed concerning his school and community to enable him to answer, with a fair degree of accuracy, the questions in the interview schedule.
4. That each student teacher of vocational agriculture cooperating in this research study is sufficiently well informed concerning farm mechanics to enable him to maintain an accurate record of the farm mechanics experiences he receives while student teaching.

Limitations of the Study

This research was undertaken for the purpose of collecting and analyzing data in an effort to ascertain possible existing associations between certain selected factors and the quality, nature and extent of farm mech-

anics experiences received by student teachers of vocational agriculture. It was not proposed that this research would establish any final answer so as to infer causation from association.

No claim is made that the factors selected for investigation are the only factors having possible degrees of association, nor are they necessarily presented as the most important factors.

The study is further limited in that the identification of the farm mechanics experiences received will be based upon the personal judgments expressed by the student teachers who contributed information for use in the study.

Need for the Study

Farm mechanics, which is an integral part of the total program of vocational agriculture, has received considerable attention from vocational agriculture leaders throughout the nation in the past few years. The theme of numerous vocational agriculture conferences in recent years has been "How can farm mechanics programs of vocational agriculture be improved?" In some states, local school administrators have received letters from state officials stating "Records on file in our office indicate that the facilities at your school are inadequate for teaching farm mechanics in vocational agriculture. Please take necessary action to correct this situation if your school desires to retain vocational agriculture as a part of its educational program."

For departments preparing teachers of vocational agriculture, this must mean increasing attention to that area of the curriculum pertaining to farm mechanics. Assuming that the technical course content of the curriculum is sufficient to prepare vocational agriculture teachers in the area of farm mechanics, then the question arises "Do student teachers

of vocational agriculture receive practical teaching experiences in the area of farm mechanics?"

Lechner makes the following statement regarding the need for more emphasis upon the student teaching program:

> ..... it was the opinion among vocational agriculture teacher trainers and supervising teachers that student teachers in vocational agriculture generally are not receiving enough desirable participating experiences in the high school training center as preparation for doing an efficient and effective job of teaching vocational agriculture.[4]

J. B. Kirkland[5] indicated that one of the biggest weaknesses of student teaching programs is that of evaluation. A teacher training institution should, according to Robert M. Longhurst, meet the challenge in preparing prospective vocational agriculture teachers. He further implies that constant re-evaluation of the farm mechanics program is needed in order to keep abreast of progress in farm mechanics.[6]

There seems to be very little information available which discloses the quality, nature and extent of farm mechanics experiences received by student teachers of vocational agriculture. The writer was unable to locate any literature which attempted to ascertain if factors common to vocational agriculture have any significant effect on a student teaching program in farm mechanics.

The information which this research study will provide may be most useful to: (1) teachers of farm mechanics, in teacher training institutions, in the development of farm mechanics programs for prospective

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[4]Ibid. p. 160.

[5]J. Bryant Kirkland, "Teacher Preparation in Agricultural Education," Agriculture Education Magazine, XXIV, No. 4, (October, 1951), p. 78.

[6]Robert M. Longhurst, "A Dynamic Farm Mechanics Curriculum For A Changing Agriculture," Agriculture Education Magazine, XXXII, No. 7 (January, 1960), p. 160.

teachers of vocational agriculture, (2) teacher trainers in planning and directing more effective courses of study in agricultural education, and (3) supervising teachers of vocational agriculture in becoming aware of what are the associative factors common to an effective program of student teaching in farm mechanics.

CHAPTER II

REVIEW OF LITERATURE

Because of the rapid advance of farm mechanization, there is a growing need for better education of those entering the teaching profession as a teacher of vocational agriculture. Farm mechanization is responsible for many new and improved practices in agriculture which place varied and numerous demands upon a teacher of vocational agriculture.

The modern combine, having many adjustments and several attachments, can cut and thresh almost any grain crop. The task of hand harvesting corn has almost completely been replaced by an easier, faster, and less costly mechanical method. To harvest the 1956 corn crop by hand would have required 432,000 men, each harvesting 100 bushels per day, working throughout the months of October, November, and December.[1] Electrical power is available to 95 per cent of the nations farms, which makes available many labor saving mechanical devices for the modern farmer. Animal power has been largely replaced by mechanical power for such operations as plowing, cultivating, harvesting, and storing crops. The use of man power has been greatly reduced by the advent of cotton pickers, combines, milking machines, and automatic feeding devices. On many farms today, farm buildings and mechanical equipment represent from 50 to 75 per cent of the total farm investment.

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[1]Instruction in Farm Mechanics, U. S. Office of Education, (Washington, 1957), p. 1.

When one considers the importance of farm mechanics on todays farms, and when one considers that many teachers of vocational agriculture presently devot 40 to 60 per cent of their high school teaching time to farm mechanics, he surely cannot help but realize the importance of a comprehensive program of instruction in farm mechanics for those young people preparing to become a teacher of vocational agriculture.

Trainees need to have an increased amount of their undergraduate technical training in the field of farm mechanics, and they also need to have a good comprehensive program of student teaching which stresses the areas of farm mechanics. The Committee on Agricultural Teacher Training of the American Society of Agricultural Engineers made the following recommendation concerning agricultural engineering phases of teacher education in agriculture:

> That departments of agriculture engineering and agricultural education be encouraged to conduct research studies, either jointly or individually, in an effort to develop improved programs of teacher education in agriculture engineering technology.[2]

Studies, Investigations, and Other Related Literature

A thorough search of all the Summaries of Studies in Agriculture Education and of all the issues of the Agriculture Education Magazine since 1950 was conducted by the writer. A review of these publications reveals that several studies have been made concerning the general area of farm mechanics and that several studies have been made in relation to student teaching in general. The writer failed to discover any studies

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[2]Agricultural Engineering Phases of Teacher Education in Agriculture, Journal of the American Society of Agricultural Engineers, June, 1960, Vol. XLI, No. 6, p. 383.

of a nature similar to this one, which is concerned with the problem of student teaching in farm mechanics.

Dry,[3] in a study conducted in twelve southern states in 1949, found that the apprentice training period for vocational agriculture was not long enough to afford the apprentice teacher an opportunity to gain experience in an appreciable number of teaching activities. Farm mechanics was one of the areas in which the apprentice teachers did not gain satisfactory experiences.

Miller,[4] in an Oklahoma study concerning student teaching, indicated that some training centers had over-emphasized such activities as community service and skill participation to the extent that organized group instruction was sacrificed and that more emphasis should be placed on teaching. Miller also found that there was a tendency in some centers to overwork the trainee and not give him any time to observe.

Phipps,[5] in Illinois, indicated that a six-week period of student teaching was found inadequate.

Price, in a statistical study of young adult farmer programs in Oklahoma and Pennsylvania, found that:

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[3]Clifton Aaron Dry, A Study of Apprentice Teaching Activities in Twelve Southern States. (Unpublished Master's thesis, Louisiana State University, 1949.)

[4]J. C. Miller, A Study of the Activities Engaged in by Prospective Teachers of Vocational Agriculture While in Teaching Centers. (Unpublished nonthesis study, Oklahoma State University, 1949.)

[5]Lloyd J. Phipps, Internship for Prospective Teachers of Vocational Agriculture in Illinois. (Unpublished Master's thesis, University of Illinois, 1959.)

> ..... the occurrence of organized instructional programs for young adult farmers is associated with substantial inventory of superior farm mechanics facilities and equipment.[6]

Price[7] also found that systematic instruction for young adult farmers was in operation in those departments which had superior programs of farm mechanics in operation.

Hobbs, in a statistical study conducted in Oklahoma, attempted to determine some of the factors associated with the occurrence of effective local farm mechanics programs in vocational agriculture. All departments of vocational agriculture in Oklahoma were rated by a jury as either being above-average, average, or below-average with regards to the effectiveness of their instructional programs in farm mechanics. Stratified random samples were drawn from the above-average and the below-average groups. Hobbs statistically analyzed the data collected and concluded that:

> ..... significant differences between the two groups were found to exist with regard to (1) having shop facilities presently available; (2) shop space available at time of present teacher's initial employment; (3) four-year time allotment for farm mechanics instruction; and (4) use of the station method in teaching farm mechanics.[8]

Curtis conducted a study in Louisiana in 1958, in which he attempted to determine which of certain selected factors affected the teaching of farm mechanics.

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[6]Robert R. Price, Factors Associated with the Occurrence of Local Young Adult Farmer Instructional Programs in Vocational Agriculture in the States of Oklahoma and Pennsylvania. (Unpublished Doctoral Dissertation, Pennsylvania State University, 1955.)

[7]Ibid. p. 172.

[8]Walter W. Hobbs, Factors Associated with the Occurrence of Effective Local Farm Mechanics Programs in Vocational Agriculture in Oklahoma. (Unpublished Doctoral Dissertation, Oklahoma State University, 1960), p. 97.

Curtis[9] found that teachers of vocational agriculture included in his study lacked sufficient training for teaching farm power and machinery, and farm electrification. A majority of the teachers in the study indicated that they spent from one-fourth to one-third of the total class time for instruction in farm mechanics. Curtis also found that among the teachers included in his study that the length of tenure of a teacher in his present teaching position did not affect the quality of his instructional program in farm mechanics.

Kennedy conducted a study in Texas in 1952, which concerned the activities of practice teachers of vocational agriculture. With regard to the activity of farm mechanics, Kennedy[10] found that: (1) Twenty-six of the 28 practice teachers gained experiences in teaching 13 topics in farm shop for a total of 229 hours. (2) The 26 students spent a total of 73 days teaching farm shop in vocational agriculture I, 49 days in vocational agriculture II, and 88 days teaching vocational agriculture III. (3) Approximately 60 per cent less time was spent working on shop projects than was spent with unclassified shop work.

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[9]Charlie M. Curtis, Some Factors Affecting Teaching of Farm Mechanics, (Unpublished Doctoral Dissertation, Louisiana State University, 1958.)

[10]Luke D. Kennedy, A Research to Determine the Activities of Practice Teachers. (Unpublished Master's thesis, Sam Houston State Teachers College, 1952.)

CHAPTER III

DESIGN OF THE STUDY

The purpose of this chapter is to describe the procedure employed in conducting this research project. The description will include a statement of the hypotheses to be tested, the sampling method, and the procedure used in obtaining and analyzing the data.

The Hypotheses Tested

The hypotheses tested in this research study were formulated as null hypotheses. This was done in order to facilitate testing by the application of appropriate tests of significance. Garrett makes the following statement regarding the null hypothesis:

> Experimenters have found the null hypothesis a useful tool in testing the reliability of differences. In its simplest form, this hypothesis asserts that there is no true difference between two population means, and that the difference found between sample means is, therefore, accidental and unimportant. The null hypothesis is akin to the legal principle that a man is innocent until he is proved guilty. It constitutes a challenge; and the function of an experiment is to give the facts a chance to refute (or fail to refute) this challenge.[1]

Wert, Neidt, and Ahmann state, "The null hypothesis... becomes the statement of a research issue which may be evaluated by an appropriate test of significance."[2]

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[1]Henry E. Garrett, Statistics in Psychology and Education, (New York, 1953), p. 213.

[2]James E. Wert, Charles O. Neidt, and J. Stanley Ahmann, Statistical Methods, (New York, 1954), p. 124.

The major hypothesis of this research project is that among programs of student teaching in vocational agriculture there are no significant differences between the quality, nature and extent of farm mechanics experiences received by student teachers and certain selected factors common to vocational agriculture.

The following hypotheses were tested in an attempt to resolve the major hypotheses:

A. No significant differences exist between the farm mechanics experiences received by student teachers of vocational agriculture and the following personal background characteristics of the supervising teachers:
   (1) age,
   (2) years of teaching experience in vocational agriculture,
   (3) years of teaching experience in present vocational agriculture department,
   (4) years of experience as a supervising teacher of vocational agriculture,
   (5) teachers receiving vocational agriculture training while enrolled in high school,
   (6) number of undergraduate hours of college credit in farm mechanics,
   (7) number of graduate hours of college credit in farm mechanics,
   (8) teachers receiving farm mechanics training while enrolled in high school, and
   (9) teachers receiving organized mechanical training other than high school or college.

B. No significant differences exist between the farm mechanics experiences received by student teachers of vocational agriculture and the follow-

ing characteristics of the individual schools and the individual communities in which student teaching was accomplished:

(1) enrollment in high school,

(2) enrollment in all-day classes in vocational agriculture,

(3) per cent of vocational agriculture students who are farm residents, and

(4) per cent of community income received from farming.

C. No significant differences exist between the farm mechanics experiences received by student teachers of vocational agriculture and the following characteristics of the local programs of vocational agriculture:

(1) hours devoted to farm mechanics in vocational agriculture I,

(2) hours devoted to farm mechanics in vocational agriculture II,

(3) hours devoted to farm mechanics in vocational agriculture III,

(4) departments having adult farmer classes, and

(5) departments having young farmer classes.

D. No significant differences exist between the farm mechanics experiences received by student teachers of vocational agriculture and the following characteristics of the farm mechanics facilities of the student teaching centers:

(1) farm mechanics building facilities,

(2) farm mechanics equipment facilities, and

(3) departments sharing farm mechanics facilities with other high school departments.

Sample Characteristics

The research project involved those students of vocational agriculture at Sam Houston State Teachers College who completed their student teaching requirements during the school year 1959-60. The research project also involved high schools located throughout the state of Texas which were designated as approved student teaching centers for vocational agriculture for the school year 1959-60.

There were, during the school year 1959-60, 54 students of vocational agriculture at Sam Houston State Teachers College who completed student teaching. Twenty-two of the 54 student teachers did their student teaching in the fall semester of 1959, while 32 students engaged in student teaching during the spring semester of 1960.

Although there were 54 student teachers of vocational agriculture during the school year 1959-60, there were only 47 student teachers included in the research project. One student, due to unusual circumstances, remained at the college for his student teaching. Three student teachers accepted various teaching positions before the end of the standard nine weeks student teaching period, and one student teacher taught full time because the supervising teacher was ill. Two of the student teachers did not attend a meeting conducted by the writer upon their return to the campus, nor was the writer able to receive any information from the two students concerning their student teaching experiences. The above mentioned seven students were excluded from the research study in order to remove any biased information which might have an effect on the findings of the research project. The final number of student teachers included in the research project was 47.

During the school year 1959-60, there were 57 Texas high schools

which were designated by Sam Houston State Teachers College and the Texas Education Agency as student teaching centers of vocational agriculture.

Each semester the student teachers were permitted to select from the list of approved student teaching centers the high school in which they desired to do their student teaching. The student teaching center selected by each student teacher was subjected to the approval of the agricultural education staff of Sam Houston State Teachers College in order to have not more than two student teachers at any one teaching center and to prevent student teachers from student teaching in high schools from which they were graduated.

Eighteen of the 57 approved student teaching centers were utilized by 22 student teachers during the fall semester of 1959. Fourteen student teachers engaged in student teaching by themselves while eight student teachers did their student teaching with a fellow student teacher.

During the spring semester of 1960, 20 of the 57 approved student teaching centers were utilized by 31 student teachers. Nine students went out to student teach by themselves, with 22 students having gone out to student teach in 11 groups of two.

Of the 20 student teaching centers employed during the spring of 1960, nine had also been employed by the fall semester students. This left 11 student teaching centers which were utilized by spring student teachers that had not been previously utilized by the fall semester student teachers. Since 18 student teaching centers were utilized by fall student teachers, and 11 non-previously utilized student teaching centers were employed during the spring, a total of 29 student teaching centers were utilized for student teaching during the school year 1959-60.

As previously mentioned, only 47 of the 54 student teachers were included in the research project. As a result of eliminating seven of the student teachers, two student teaching centers had to be eliminated from the study also. The final sample for the research study consisted of 47 student teachers of vocational agriculture and 27 student teaching centers of vocational agriculture.

Procedure for Collection of Data

Two schedules,[3] one entitled Possible Factors Associated with the Quality, Nature, and Extent of Farm Mechanics Experiences Received by Student Teachers of Vocational Agriculture, and the other, The Quality, Nature and Extent of Farm Mechanics Experiences Received by Student Teachers of Vocational Agriculture, were developed for purpose of obtaining data for this research project.

The schedule entitled Possible Factors Associated with the Quality, Nature, and Extent of Farm Mechanics Experiences Received by Student Teachers of Vocational Agriculture was used in securing information about the supervising teachers, the student teaching centers, the local programs of vocational agriculture, and the farm mechanics facilities available at each student teaching center. The information necessary to complete this schedule was obtained in personal interviews with each of the 27 supervising teachers included in this research project. The personal interview technique was selected as the most appropriate one for obtaining this portion of the data for the research project. It was felt that greater accuracy in completing the schedule could be achieved through personal interview than through the use of questionnaires.

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[3]See appendix, p. 89.

The interview schedule used in obtaining data necessary for testing the hypotheses in this research project was constructed with the assistance of the teacher training staffs in agricultural education at the Sam Houston State Teachers College and at the Oklahoma State University. The items included in the interview schedule are ones which have been considered by many in the field of agricultural education as having a possible association with the farm mechanics experiences received by student teachers of vocational agriculture.

The tentative interview schedule was later reconstructed with the advice of persons who had made similar studies in order to provide more clarity. The interview schedule was then used in interviewing three teachers of vocational agriculture, who were not included in this research project, in order to check for further clarity and to acquire suggestions for modifying the interview schedule.

After the interview schedule was reconstructed and brought to its final form, it was used in interviewing the 27 teachers of vocational agriculture included in this research project.

The schedule entitled, The Quality, Nature, and Extent of Farm Mechanics Experiences Received by Student Teachers of Vocational Agriculture was also developed for the purpose of obtaining data necessary for testing the stated hypotheses of this research project. This schedule was constructed for use by the student teachers in keeping a daily record of the farm mechanics experiences they received while engaged in student teaching.

The schedule used in obtaining data regarding the quality, nature, and extent of farm mechanics experiences received by student teachers of vocational agriculture was constructed with the assistance of agricultural

education staff members at the Sam Houston State Teachers College and at the Oklahoma State University. Suggestions were also received from fellow graduate students and educational staff members when the research proposal was presented in a seminar session.

After the schedule was brought to the final form, the writer presented it to the student teachers in a meeting conducted with them approximately two weeks before the students went out to their respective student teaching centers. During this meeting, the research project was briefly explained to the student teachers, with especial attention being given to the schedule to be maintained by the student teachers. Each student teacher was asked to keep a daily record of the farm mechanics experiences he received while at his respective student teaching center.

The writer met with the student teachers again upon their return to the campus. During this meeting, the schedules were collected from the student teachers present and a general discussion was conducted concerning the farm mechanics experiences received by the student teachers.

After the two sets of data, the interview schedule and the farm mechanics experiences schedule, were obtained and tabulated, it was subjected to statistical tests to determine whether significant differences were evident between the farm mechanics experiences received by student teachers and certain selected factors common to vocational agriculture. The tests used in the treatment of the data were the analysis of regression and the pooled variance. The level of significance required for the rejection of the null hypothesis was set at the five per cent level for this research project.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Data presented in this chapter were obtained by two means. The data pertaining to the supervising teachers, the student teaching centers, the local programs of vocational agriculture, and the farm mechanics facilities, were secured through personal visitation in each of the 27 departments of vocational agriculture included in this research study. Farm mechanics buildings and equipment were scored by direct observation, and the other data were secured by interview with the teacher of vocational agriculture. Data regarding the quality, nature and extent of farm mechanics experiences received by the 47 student teachers of vocational agriculture included in this research study were obtained from daily farm mechanics activity reports maintained by the student teachers.

After the desired data were secured through the personal interview technique and the daily farm mechanics activity reports, the data were tabulated and statistically treated in order to determine if significant differences existed between the farm mechanics experiences received by student teachers and certain selected factors common to vocational agriculture.

In the tabular presentation where the two data were brought together for statistical treatment, two asterisks (**) immediately after the digits indicate a statistical difference which is significant at the one per cent level. One asterisk (*) appearing immediately after the digits is indicative of a significant difference at the five per cent level. When

no asterisk appears it will be assumed that the difference observed, if any, was not significant but was possibly due to sampling fluctuations. As previously stated, the five per cent level of significance was selected for this research study. Unless the appropriate statistical treatment proved differences to be significant at this level, the null hypotheses were accepted.

Data Regarding Farm Mechanics Experiences Received

Data regarding the farm mechanics experiences received by the 47 student teachers were divided into the following five groups: (1) farm shop experiences, (2) farm power and machinery experiences, (3) farm electrification experiences, (4) farm buildings and conveniences experiences, and (5) soil and water management experiences. The experiences received by each student teacher concerning the area of farm mechanics were tabulated and scored on the following basis:

1. A student teacher was considered to have received an experience valued at the four level if he instructed for a period of one hour in one of the five areas of farm mechanics included in this research study. In addition to instructing for a period of one hour, the student must have been involved in a critique concerning the lesson he instructed with either the supervising teacher or a member of the agriculture teacher training staff of Sam Sam Houston State Teachers College.

2. A student teacher was considered to have received an experience valued at the three level, if he instructed for a period of one hour in one of the five areas of farm mechanics, but did not participate in a critique concerning the lesson he instructed.

3. A student teacher was considered to have received an experience valued at the two level if he supervised for a period of one hour a class engaged in activities concerning one of the five areas of farm mechanics. The student teacher, although not formally instructing the class, was considered to be in charge of the group with the responsibility of guiding them and assisting them with any problems which they might have encountered.

4. A student teacher was considered to have received an experience valued at the one level if he observed another person instruct for a period of one hour in one of the five areas of farm mechanics. The person doing the instructing could be either a fellow student teacher or the supervising teacher.

Tables I through V were designed to show the kind and number of farm mechanics experiences received by the 47 student teachers in each of the five farm mechanics areas included in this research project. Table VI was arranged to show the distribution of total farm mechanics experiences received by the 47 student teachers, while Table VII was arranged to show the distribution of total scores received by the student teachers for the farm mechanics experiences received.

Farm shop experiences received. Table I shows that is the area of farm shopwork, the 47 student teachers of vocational agriculture received

TABLE I

NATURE AND EXTENT OF FARM SHOP EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Nature of experience	Level of experience	Experiences Received	
		Number	Score
Formal instruction followed by a critique	4	32	128
Formal instruction	3	185	555
Supervised class	2	348	696
Observed another instruct	1	92	92
Totals		657	1471
Mean experiences received in farm shop		14.45	
Mean score received in farm shop		31.28	

32 experiences on the four level, 185 experiences on the three level, 348 experiences on the two level, and 92 experiences on the one level. The range of experiences received in farm shop ran from zero to 58, with the mean experiences received by each student teacher being 14.45. The mean score received in the area of farm shop for each student teacher was 31.28. It is noted that over one-half of all the experiences received in the area of farm shop was received only at the number two level.

Farm power and machinery experiences received. Reference to Table II will show that in the area of farm power and machinery the 47 student teachers of vocational agriculture received zero experiences on the four level, 17 experiences on the three level, 28 experiences on the two level, and 25 experiences on the one level for a total of 70 experiences. The

TABLE II

NATURE AND EXTENT OF FARM POWER AND MACHINERY EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Nature of experience	Level of experience	Experiences Received	
		Number	Score
Formal instruction followed by a critique	4	0	0
Formal instruction	3	17	51
Supervised class	2	28	56
Observed another instruct	1	25	25
Totals		70	132
Mean experiences received in farm power and machinery		1.49	
Mean score received in farm power and machinery		2.80	

number of experiences received in farm power and machinery varied from zero to 13 with the mean experiences received being 1.49. A total score of 132 was accumulated by the 47 student teachers which yielded a mean score for each student teacher of 2.80.

Farm electrification experiences received. The data presented in Table III indicate that in the area of farm electrification the 47 student teachers received four experiences on the four level, 35 experiences on the three level, 43 experiences on the two level, and 10 experiences on the one level, for a total of 92 experiences. The number of experiences

TABLE III

NATURE AND EXTENT OF FARM ELECTRIFICATION EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Nature of experiences	Level of experiences	Experiences Received	
		Number	Score
Formal instruction followed by a critique	4	4	16
Formal instruction	3	35	105
Supervised class	2	43	86
Observed another instruct	1	10	10
Totals		92	217
Mean experiences received in farm electrification		1.96	
Mean score received in farm electrification		4.62	

received by each student teacher ranged from zero to 18 with the mean experiences received being 1.96. The mean score for farm electrification

experiences received was 4.62. It will be noted that a majority of the farm electrification experiences were received on the two and three levels of experience.

Farm buildings and convenience experiences received. Table IV shows that the 47 student teachers included in this research study received a total of 120 experiences in the area of farm buildings and conveniences. Of the 120 experiences received, two were received at the four level, 30 were received at the three level, 73 were received at the two level and 15 were received at the one level. The mean experiences received was 2.55 while the mean score received for farm buildings and conveniences was 5.51. The number of experiences received by each student teacher

TABLE IV

NATURE AND EXTENT OF FARM BUILDINGS AND CONVENIENCES EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Nature of experience	Level of experience	Experiences Received	
		Number	Score
Formal instruction followed by a critique	4	2	8
Formal instruction	3	30	90
Supervised class	2	73	146
Observed another instruct	1	15	15
Totals		120	259
Mean experiences received in farm buildings and conveniences		2.55	
Mean score received in farm buildings and conveniences		5.51	

ranged from zero to 14. It will be noted that over one-half of all experiences received in this area was received by supervising a class engaged in an activity concerning farm buildings and conveniences.

Soil and water management experiences received. Not any of the 47 student teachers included in this research study received level four experiences in the area of soil and water management. As is shown in Table V, the student teachers received 15 experiences on the three level, 24 experiences on the two level, and 16 experiences on the one level for a total of 55 experiences in soil and water management. The mean number of experiences received by the 47 student teachers in the area of soil and water management was 1.17 while the mean score received was 2.32. There

TABLE V

NATURE AND EXTENT OF SOIL AND WATER MANAGEMENT EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Nature of experience	Level of experience	Experiences Received	
		Number	Score
Formal instruction followed by a critique	4	0	0
Formal instruction	3	15	45
Supervised class	2	24	48
Observed another instruct	1	16	16
Totals		55	109
Mean experiences received in soil and water management		1.17	
Mean score received in soil and water management		2.32	

was no reason that was readily discernable to indicate why the student teacher failed to receive any level four experiences in this area.

Number of farm mechanics experiences received. Table VI shows that 27.65 per cent of the student teachers received from zero to nine farm mechanics experiences while engaged in student teaching. Another 27.65 per cent of the student teachers received from 20 to 29 farm mechanics experiences, while 23.40 per cent of the student teachers received from 10 to 19 farm mechanics experiences. Only 10 student teachers received

TABLE VI

FREQUENCY DISTRIBUTION OF FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Experiences Class interval	Student Teachers	
	Number	Per Cent
60-Plus	2	4.26
50-59	3	6.39
40-49	1	2.13
30-39	4	8.52
20-29	13	27.65
10-19	11	23.40
0- 9	13	27.65
Totals	47	100.00

30 or more farm mechanics experiences. The range of farm mechanics experiences ran from zero, which was received by six student teachers, to a high of 92 which was received by only one student teacher. The mean farm mechanics experiences received by each student teacher was 21.08.

Scores for farm mechanics experiences received. Table VII shows that the mean score for farm mechanics experiences received was 46.55. Seventeen of the 47 student teachers received a score of less than 20 for the farm mechanics experiences they received. Twenty-one student teachers received a farm mechanics score ranging from 20 to 80. Nine of the student teachers received a farm mechanics score of 80 or above. with the highest score received by a student teacher being 224. Due to the wide range of scores received by the student teachers the median score of 35.33 is shown in Table VII.

TABLE VII

FREQUENCY DISTRIBUTION OF SCORES FOR FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Scores Class interval	Student Teachers Number	Per Cent
100-Plus	4	8.51
90-99	3	6.38
80-89	2	4.26
70-79	2	4.26
60-69	3	6.38
50-59	5	10.64
40-49	2	4.26
30-39	6	12.76
20-29	3	6.38
10-19	8	17.02
0- 9	9	19.15
Totals	47	100.00
Mean score for farm mechanics experiences	46.55	
Median score for farm mechanics experiences	35.33	

Data Regarding Personal Background Characteristics of the Teacher

Data regarding personal background characteristics of the 27 supervising teachers of vocational agriculture included in this research study include the following nine selected factors: (1) age of teachers; (2) years of teaching experience in vocational agriculture; (3) years of teaching experience in present vocational agriculture department; (4) years of experience as a supervising teacher of vocational agriculture; (5) teachers receiving vocational agriculture training while enrolled in high school; (6) number of undergraduate hours of college credit in farm mechanics; (7) number of graduate hours of college credit in farm mechanics; (8) teachers receiving farm mechanics training while enrolled in high school; and (9) teachers receiving organized mechanical training other than high school or college.

Ages of teachers of vocational agriculture. Table VIII shows that the mean age of the supervising teachers was 37.65 years. Four teachers were less than 31 years of age. Slightly over one-half of the supervising teachers, or 51.84 per cent, were over 30 years of age, but less than 41 years of age. Only eight teachers were over the age of 40. One supervising teacher declined to give his age during the interview. Therefore, the mean age shown in Table VIII was calculated on the basis of 26 teachers rather than 27 teachers.

TABLE VIII

FREQUENCY DISTRIBUTION OF THE AGES OF 27 SUPERVISING TEACHERS OF VOCATIONAL AGRICULTURE

Class interval, Ages in years	Supervising teacher	
	Number	Per Cent
51-55	2	7.41
46-50	2	7.41
41-45	4	14.82
36-40	6	22.22
31-35	8	29.62
26-30	4	14.82
Age withheld	1	3.70
Totals	27	100.00
Mean age of supervising teachers	37.65	

Regression analysis of teachers ages on farm mechanics experiences received. The data shown in Table VII and in Table VIII were brought together and tested to determine whether there is a significant relationship between the farm mechanics experiences received by student teachers and the ages of the supervising teachers. The analysis of this test is shown in Table IX. The test for significance of the regression in this research study is taken from Wert, Neidt, and Ahmann.[1] Table IX shows that the test for the significance of regression of farm mechanics experiences on ages of supervising teachers yields an F value of 1.07, which is below the 4.24 value required for significance at the five per cent level. Therefore, the null hypothesis cannot be rejected.

TABLE IX

ANALYSIS OF REGRESSION OF AGE OF SUPERVISING TEACHERS ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	2,381.91	2,381.91
Residuals	24	53,241.98	2,218.41
Totals	25	55,623.89	2,224.95
F value of the relationship between age and farm mechanics experiences received		1.07	

[1]James E. Wert, Charles O. Neidt, and J. Stanley Ahmann, Statistical Methods, (New York, 1954), p. 232.

Years of teaching experience in vocational agriculture. The data presented in Table X indicate that the mean years of experience in teaching vocational agriculture for the 27 supervising teachers is 12.63 years. It is noted that 33.33 per cent of the teachers have completed more than five but less than 11 years of teaching vocational agriculture while another 29.63 per cent have taught more than 10 years but less than 16 years. Seven teachers, or 25.93 per cent, have more than 15 years teaching experience while only 11.11 per cent of the teachers had five or less years experience as a teacher of vocational agriculture.

TABLE X

FREQUENCY DISTRIBUTION OF YEARS TAUGHT VOCATIONAL AGRICULTURE AS REPORTED BY 27 SUPERVISING TEACHERS OF VOCATIONAL AGRICULTURE

Class interval Years taught	Supervising Teachers Number	 Per Cent
26-30	1	3.70
21-25	4	14.82
16-20	2	7.41
11-15	8	29.63
6-10	9	33.33
0- 5	3	11.11
Totals	27	100.00
Mean years taught vocational agriculture by each supervising teacher	12.63	

Regression analysis of years teaching experience on farm mechanics experiences received. The test for the significance of regression of farm mechanics experiences on years teaching experience is shown in Table XI. Data in Table XI, which were taken from Table VII and Table X, yielded an F value of 3.57. Although, an F value of 3.57 does not in-

TABLE XI

ANALYSIS OF REGRESSION OF YEARS TAUGHT VOCATIONAL AGRICULTURE ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	6,966.68	6,966.68
Residuals	25	48,811.40	1,952.46
Totals	26	55,778.08	2,145.31
F value of the relationship between years taught and farm mechanics experiences received		3.57	

dicate a significant relationship at the five per cent level between years teaching experience and farm mechanics experiences received, it is approaching the 4.24 value which is required for a significance relationship at the five per cent level. With the evidence at hand, the null hypothesis must be accepted.

Years teaching experience in present department of vocational agriculture. Reference to Table XII shows that 14.82 per cent of the supervising teachers have taught 16 or more years in their present teaching position. One-third of the teachers have taught not less than six years nor more than ten years in their present teaching position, while 14.82 per cent of the teachers have taught more than 10 years but less than 16 years in their present position. Five or less years teaching experience in the present position was indicated by 10 of the supervising teachers.

TABLE XII

FREQUENCY DISTRIBUTION OF YEARS TAUGHT VOCATIONAL AGRICULTURE IN PRESENT POSITION AS REPORTED BY 27 SUPERVISING TEACHERS OF VOCATIONAL AGRICULTURE

Class interval Years taught in present position	Supervising Teachers	
	Number	Per Cent
21-25	2	7.41
16-20	2	7.41
11-15	4	14.82
6-10	9	33.33
0- 5	10	37.03
Totals	27	100.00
Mean years taught vocational agriculture in present position	8.96	

Regression analysis of years teaching experience in present position on farm mechanics experiences received. One of the factors taken into consideration by educators when selecting student teaching centers is the length of service the teacher of vocational agriculture has in his present teaching position. In referring to Table XIII, it is found that a significant relationship between the years teaching experience in present position and the farm mechanics experiences received by student teachers does not exist at the five per cent level. That no significant relationship existed between years teaching experience in present position and the farm mechanics experiences received sustained the acceptance of the hypothesis.

TABLE XIII

ANALYSIS OF REGRESSION OF YEARS TAUGHT VOCATIONAL AGRICULTURE IN PRESENT POSITION ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	603.81	603.81
Residuals	25	55,174.27	2,200.97
Totals	26	55,778.08	2,145.31
F value of the relationship between years taught in present position and farm mechanics experiences received.		0.27	

Years experience as a supervising teacher. The data presented in Table XIV show that the average years served as a supervising teacher was 5.93 years. Sixteen teacners have been a supervising teacher of vocational agriculture less than six years, while eight teachers have not less than six years nor more than 10 years experience as a supervising teacher. Only three teachers have served in the capacity of a Supervising teacher for more than 10 years.

TABLE XIV

FREQUENCY DISTRIBUTION OF YEARS SERVED AS A SUPERVISING TEACHER IN VOCATIONAL AGRICULTURE AS REPORTED BY 27 SUPERVISING TEACHERS

Class interval Years served as supervising teacher	Supervising Teachers	
	Number	Per Cent
21-25	1	3.70
16-20	1	3.70
11-15	1	3.70
6-10	8	29.63
0- 5	16	59.27
Totals	27	100.00
Mean years as a supervising teacher	5.93	

Regression analysis of years experience as a supervising teacher on farm mechanics experiences received. Table XV shows that the test for the significance of regression of years experience as a supervising teacher on farm mechanics experiences yielded an F value of only 0.12. With the

TABLE XV

ANALYSIS OF REGRESSION OF YEARS EXPERIENCE AS A SUPERVISING TEACHER ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	276.23	276.23
Residuals	25	55,501.85	2,220.07
Totals	26	55,778.08	2,145.31
F value of the relationship between years experience as a supervising teacher and farm mechanics experiences received		0.12	

sample at hand, an F value of this size indicates that a very small portion of the variance is explained by the regression of farm mechanics experiences on years experience as a supervising teacher. Therefore, the null hypothesis cannot be rejected.

Teachers receiving vocational agriculture instruction while enrolled in high school. Table XVI reveals that 74.07 per cent of the supervising teachers had received instruction in vocational agriculture while enrolled in high school. Fifteen of the teachers had received three years of vocational agriculture training while only seven of the teachers had not received any instruction in vocational agriculture. The mean number of years enrolled in high school vocational agriculture by the 27 teachers included in this research study was 2.15 years.

TABLE XVI

NUMBER OF YEARS ENROLLED IN VOCATIONAL AGRICULTURE WHILE ATTENDING HIGH SCHOOL AS REPORTED BY 27 SUPERVISING TEACHERS OF VOCATIONAL AGRICULTURE

Years enrolled	Supervising Teachers	
	Number	Per Cent
4	2	7.41
3	15	55.55
2	2	7.41
1	1	3.70
0	7	25.93
Totals	27	100.00
Mean number of years enrolled in high school vocational agriculture	2.15	

Regression analysis of years enrolled in high school vocational agriculture on farm mechanics experiences received. The test for the significance of regression of farm mechanics experiences on years en-

TABLE XVII

ANALYSIS OF REGRESSION OF YEARS ENROLLED IN HIGH SCHOOL VOCATIONAL AGRICULTURE ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	4,751.85	4,751.85
Residuals	25	51,026.23	2,041.04
Totals	26	55,778.08	2,145.31
F value of the relationship between years enrolled in high school vocational agriculture and farm mechanics experiences received		2.33	

rolled in high school vocational agriculture is shown in Table XVII. Since the F value of 2.33 is below that required for a significant relationship at the five per cent level the null hypothesis is tenable.

College hours of undergraduate credit in farm mechanics courses. In referring to Table XVIII, one finds that 51.85 per cent of the supervising teachers had received not less than four nor more than seven hours of undergraduate credit in farm mechanics courses. Twelve, or

TABLE XVIII

FREQUENCY DISTRIBUTION OF HOURS OF UNDERGRADUATE CREDIT IN FARM MECHANICS RECEIVED BY 27 SUPERVISING TEACHERS OF VOCATIONAL AGRICULTURE

Hours credit	Supervising Teachers	
	Number	Per Cent
16-Plus	1	3.70
12-15	3	11.12
8-11	8	29.63
4- 7	14	51.85
0- 3	1	3.70
Totals	27	100.00
Mean number of undergraduate credit hours in farm mechanics	7.96	

44.45 per cent of the teachers, had received eight or more hours of undergraduate credit in farm mechanics. Only 3.70 per cent of the teachers had received less than four hours of undergraduate credit in farm mechanics, while the mean hours of undergraduate credit received by the teachers in farm mechanics was 7.96.

Regression analysis of college hours undergraduate credit in farm mechanics on farm mechanics experiences received. The data presented in Table XIX show that the analysis of the test for a significant relationship between college hours undergraduate credit in farm mechanics courses and the farm mechanics experiences received by the student teachers yielded an F value of 0.35. With an F value of only 0.35, it can be seen that only a very small portion of the variance is explained by the regression of farm mechanics experiences on the hours of undergraduate credit received in farm mechanics courses. Therefore, with the sample at hand, insufficient evidence is found to refute the null hypothesis.

TABLE XIX

ANALYSIS OF REGRESSION OF COLLEGE HOURS OF UNDERGRADUATE CREDIT IN FARM MECHANICS ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	768.94	768.94
Residuals	25	55,778.08	2,200.36
Totals	26	55,778.08	2,145.31
F value of the relationship between hours of undergraduate credit in farm mechanics and farm mechanics experiences received		0.35	

College hours of graduate credit in farm mechanics courses. As shown in Table XX, 74.08 per cent of the supervising teachers had received three or less hours of college graduate credit in farm mechanics courses. Five supervising teachers had received more than three but less than eight hours graduate credit, while only two supervising teachers had received more than seven college hours credit in farm mechanics courses. The mean number of graduate hours credit in farm mechanics received by the supervising teachers was 3.04.

TABLE XX

FREQUENCY DISTRIBUTION OF HOURS OF GRADUATE CREDIT IN FARM MECHANICS RECEIVED BY 27 SUPERVISING TEACHERS OF VOCATIONAL AGRICULTURE

Hours credit	Supervising Teachers	
	Number	Per Cent
12-15	1	3.70
8-11	1	3.70
4- 7	5	18.52
0- 3	20	74.08
Totals	27	
Mean number of graduate credit hours in farm mechanics	3.04	

Regression analysis of college hours graduate credit in farm mechanics on farm mechanics experiences received. Table XXI shows that a test for the significance of the relationship between college hours credit in farm mechanics courses and the farm mechanics experiences received by the student teachers yielded an F value of 1.22. This F value does not indicate a significant relationship between the two factors at the five

TABLE XXI

ANALYSIS OF REGRESSION OF HOURS OF GRADUATE CREDIT IN FARM MECHANICS ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	2,597.28	2,597.28
Residuals	25	53,180.80	2,127.27
Totals	26	55,778.08	2,145.31
F value of the relationship between hours of graduate credit in farm mechanics and farm mechanics experiences received		1.22	

per cent level. It does indicate that a greater portion of the variance observed is explained by the regression of farm mechanics experiences on hours of graduate credit in farm mechanics than was explained by the regression of farm mechanics experiences on hours of under graduate credit in farm mechanics when an F value of only 0.35 was obtained.

Teachers receiving farm mechanics instruction while enrolled in high school. Table XXII reveals that 55.56 per cent of the supervising teachers had received high school training in farm mechanics. Twelve, or 44.44 per cent of the supervising teachers, indicated they had not received such training while enrolled in high school. Since Table XVI indicated that seven of the supervising teachers had not received high school instruction in vocational agriculture, one can conclude that all but five of those teachers receiving high school instruction in vocational agriculture also received training in the area of farm mechanics.

TABLE XXII

HIGH SCHOOL FARM MECHANICS TRAINING RECEIVED BY 27 SUPERVISING TEACHERS OF VOCATIONAL AGRICULTURE

Received training	Supervising Teachers	
	Number	Per Cent
Yes	15	55.56
No	12	44.44
Totals	27	100.00

TABLE XXIII

FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS FROM SUPERVISING TEACHERS HAVING OR NOT HAVING RECEIVED HIGH SCHOOL FARM MECHANICS TRAINING

Response	Number	Degrees of Freedom	Mean Score	Sum of Squares
Yes	15	14	47.40	51,439
No	12	11	52.83	71,340
Totals	27	25		
t-value of difference between means			0.30	

Farm mechanics experiences received in departments where the supervising teachers had or had not received high school farm mechanics training. Data concerning the farm mechanics experiences received by the student teachers were divided into two groups for the analysis of pooled variance.[2] One group consisted of the mean scores received at those student teaching centers where the supervising teachers indicated "yes" to certain inquiries on the interview schedule. The second group consisted of the mean scores received at those student teaching centers where the supervising teachers indicated "no" to certain inquiries on the interview schedule.

Table XXIII shows that a mean score of 47.40 was received by those student teachers who taught at student teaching centers where the supervising teachers had received farm mechanics training while enrolled in high school. The mean score for the group of student teachers whose supervising teachers had not received high school farm mechanics training

[2]James B. Wert, Charles Q. Neidt, and J. Stanley Ahmann, Statistical Methods, (New York, 1954), p. 135.

was 52.83. The mean difference in scores between the two groups was 5.43 which has a t-value of 0.30. A t-value of this size is greatly below that required for significance at the five per cent level. Therefore, the null hypothesis cannot be rejected.

TABLE XXIV

TEACHERS RECEIVING ORGANIZED CIVILIAN MECHANICAL TRAINING BELOW THE COLLEGE LEVEL

Received training	Supervising Teachers	
	Number	Per Cent
Yes	10	37.03
No	17	62.97
Totals	27	100.00

Supervising teachers having or not having received organized civilian mechanical training below the college level. Table XXIV indicates that 37.03 per cent of the supervising teachers had received some organized civilian mechanical training below the college level. Sixteen, or 62.97 per cent, of the supervising teachers indicated that they had not received any organized mechanical training below the college level.

Farm mechanics experiences received in departments where the supervising teachers had or had not received organized civilian mechanical training. The data in Table XXV reveal that a mean score of 47.40 was received by those student teachers who taught in student teaching centers where the supervising teachers had received organized civilian mechanical training. A mean score of 51.24 was received by those student teachers whose supervising teachers had not received civilian mechanical training. The mean difference in scores between the two groups was 3.84, which yielded a t-value of 0.28. It is noted that the t-value of the difference between the means concerning supervising teachers having or not having received civilian mechanical training is very close to the t-value for the difference between the means concerning supervising teachers having or not having received high school farm mechanics instruction. That no significant difference existed between the mean scores received between the two groups of student teachers sustained the acceptance of the hypothesis.

TABLE XXV

FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS FROM SUPERVISING TEACHERS HAVING OR NOT HAVING RECEIVED ORGANIZED CIVILIAN MECHANICAL TRAINING

Response	Number	Degrees of Freedom	Mean Score	Sum of Squares
Yes	10	9	47.40	34,816
No	17	16	51.24	87,963
Totals	27	25		
t-value of difference between means		0.28		

Data Regarding the Characteristics of the Local School and the Service Area of the School

The characteristics concerning the school and the service area of the school were categorized into the following four items of consideration: (1) average enrollment in high school, (2) average enrollment in vocational agriculture, (3) per cent of vocational agriculture students who are farm residents, and (4) per cent of community income received from farming.

Frequency distribution of high school enrollment. The data presented in Table XXVI show that the mean high school enrollment in the 27 student teaching centers was 322.81. Enrollment in 15 of the high schools was below 200, while eight high schools had an enrollment of more than 200 but less than 500 students. Only four high schools had an enrollment of 600 or more students. The range of high school enroll-

TABLE XXVI

FREQUENCY DISTRIBUTION OF HIGH SCHOOL ENROLLMENT OF 27 STUDENT TEACHING CENTERS OF VOCATIONAL AGRICULTURE

Class interval High school enrollment	Student Teaching Centers	
	Number	Per Cent
700 - Plus	3	11.12
600	1	3.70
500	0	0.00
400	1	3.70
300	5	18.52
200	2	7.40
100	12	44.44
0	3	11.12
Totals	27	100.00

Mean enrollment of each high school 322.81.

ment was from 62 students to 1800 students. It is noted in Table XXVI that 55.56 per cent of the high schools had an enrollment of less than 200, while the mean enrollment was 322.81.

TABLE XXVII

ANALYSIS OF REGRESSION OF HIGH SCHOOL ENROLLMENT ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	2,332.90	2,332.90
Residuals	25	53,445.18	2,137.80
Totals	26	55,778.08	2,145.31
F value of the relationship between high school enrollment and farm mechanics experiences received		1.09	

Regression analysis of high school enrollment on farm mechanics experiences received. The test for the significance of regression of high school enrollment on farm mechanics experiences received is shown in Table XXVII. Data for Table XXVII were taken from Table VII and Table XXVI. The data in Table XXVII yielded an F value of 1.09 which connotes that a significant relationship between high school enrollment and the farm mechanics experiences received by the student teachers does not exist at the five per cent level. With the evidence at hand, one might conclude that the enrollment of the high school cannot be significantly associated with the quality, nature and extent of the farm mechanics experiences received by a student teacher of vocational agriculture. Therefore, the null hypothesis is tenable.

Frequency distribution of vocational agriculture enrollment.

Reference to Table XXVIII shows that the mean vocational agriculture enrollment in the 27 student teaching centers was 46.59. Fifteen, or 55.55 per cent of the student teaching centers had an enrollment of less than 45 students. Only five centers had an enrollment of 60 or more students, while seven centers had an enrollment of more than 44 but less than 60 students. All of the student teaching centers employed only one teacher of vocational agriculture.

TABLE XXVIII

FREQUENCY DISTRIBUTION OF VOCATIONAL AGRICULTURE ENROLLMENT OF 27 STUDENT TEACHING CENTERS

Class interval Enrollment	Student Teaching Centers	
	Number	Per Cent
90-104	1	3.70
75- 89	0	0.00
60- 74	4	14.82
45- 59	7	25.93
30- 44	10	37.03
15- 29	5	18.52
Totals	27	100.00
Mean vocational agriculture enrollment	46.59	

Regression analysis of vocational agriculture enrollment on farm mechanics experiences received. Table XXIX shows that a test for the significance of the relationship between enrollment in vocational agriculture and the farm mechanics experiences received by the student

TABLE XXIX

ANALYSIS OF REGRESSION OF VOCATIONAL AGRICULTURE ENROLLMENT ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	150.96	150.96
Residuals	25	55,627.12	2,225.08
Totals	26	55,778.08	2,145.31
F value of the relationship between vocational agriculture enrollment and farm mechanics experiences received		0.70	

teachers yielded an F value of 0.70. With an F value of only 0.70, it can be seen that the observed relationship is greatly below that required for significance at the five per cent level. Therefore, the null hypothesis cannot be rejected.

Frequency distribution of the percentage of vocational agriculture students who are farm boys. In referring to Table XXX, one can see that a major percentage of the vocational agriculture students in the 27 centers are farm boys. Ten, or 37.03 per cent of the student teaching centers indicated that the percentage of their students who were farm boys ranged from zero to 59. Thirteen supervising teachers indicated that not less than 60 per cent nor more than 79 per cent of their vocational agriculture students were farm boys. Only four supervising teachers indicated that 80 per cent or more of their vocational agriculture students lived on a farm. Three supervising teachers indicated that the range for the percentage of students who were farm boys was from 11 per cent to 100 per cent.

TABLE XXX

FREQUENCY DISTRIBUTION OF THE PERCENTAGE OF VOCATIONAL AGRICULTURE STUDENTS WHO ARE FARM BOYS IN 27 STUDENT TEACHING CENTERS

Class interval Per Cent	Student Teaching Centers	
	Number	Per Cent
80-100	4	14.81
60- 79	13	48.16
40- 59	4	14.81
20- 39	3	11.11
0- 19	3	11.11
Totals	27	100.00
Mean percentage of students who are farm boys	59.38	

Regression analysis of percentage of students who are farm boys on farm mechanics experiences received. The test for the significance of regression of farm mechanics experiences on percentage of students who are farm boys is shown in Table XXXI. The data presented in Table XXXI yielded an F value of 0.27, which is greatly below that required for a significant relationship at the five per cent level. Therefore, the null hypothesis cannot be rejected.

TABLE XXXI

ANALYSIS OF REGRESSION OF PERCENTAGE OF VOCATIONAL AGRICULTURE STUDENTS WHO ARE FARM BOYS ON THE FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	603.89	603.89
Residuals	25	55,174.19	2,206.96
Totals	26	55,778.08	2,145.31
F value of the relationship between percentage of students who are farm boys and farm mechanics experiences received		0.27	

Percentage of communities deriving fifty per cent or more of income from farming. Table XXXII indicates that 66.67 per cent of the communities in which the student teaching centers were located received 50 per cent

TABLE XXXII

STUDENT TEACHING COMMUNITIES DERIVING FIFTY PER CENT OR MORE OF THEIR INCOME FROM FARMING

Fifty per cent or more of income from farming	Student Teaching Centers	
	Number	Per Cent
Yes	18	66.67
No	9	33.33
Totals	27	100.00

or more of their income from farming. Nine supervising teachers indicated that their communities received less than 50 per cent of their income from farming.

Farm mechanics experiences received in departments where less than or more than fifty per cent of community income came from farming. The data presented in Table XXXIII reveal that a mean score of 52.0 was received by those student teachers who taught in student teaching centers where the community received less than 50 per cent of its income from farming. The mean score for the group of student teachers who taught in centers where the community did not receive 50 per cent of its income from farming was 48.72. The mean difference of 3.28 between the scores received by the two groups has a t-value of 0.17, which is not significant at the five per cent level. Therefore, the null hypothesis cannot be rejected.

TABLE XXXIII

FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS IN DEPARTMENTS WHERE LESS THAN OR MORE THAN FIFTY PER CENT OF COMMUNITY INCOME CAME FROM FARMING

Response	Number	Degrees of Freedom	Mean Score	Sum of Squares
Yes	18	17	48.72	86,333
No	9	8	52.00	36,446
Totals	27	25		
t-value of difference between means			0.17	

Data Regarding the Characteristics of the Local Programs of Vocational Agriculture

The characteristics concerning the local programs of vocational agriculture were categorized into the following five items of consideration: (1) hours devoted to farm mechanics in vocational agriculture I, (2) hours devoted to farm mechanics in vocational agriculture II, (3) hours devoted to farm mechanics in vocational agriculture III, (4) departments having organized adult farmer classes, and (5) departments having organized young farmer classes.

Frequency distribution of hours of farm mechanics taught in vocational agriculture I. The data in Table XXIV show that on the average, 36.81 hours of farm mechanics were taught in vocational agriculture I. Nine supervising teachers indicated that they taught less than 30 hours annually in vocational agriculture I. Only eight teachers indicated that they taught 50 or more hours of farm mechanics in vocational agriculture I.

TABLE XXXIV

FREQUENCY DISTRIBUTION OF HOURS OF FARM MECHANICS TAUGHT IN VOCATIONAL AGRICULTURE I IN 27 STUDENT TEACHING CENTERS

Class interval Hours taught	Student Teaching Centers	
	Number	Per Cent
70-Plus	2	7.40
50-69	6	22.23
30-49	10	37.04
10-29	9	33.33
Totals	27	100.00
Mean hours taught in vocational agriculture I	36.81	

Regression analysis of hours devoted to farm mechanics in vocational agriculture I on farm mechanics experiences received. Reference to Table XXXV shows that a test for the significance of the relationship between hours devoted to farm mechanics in vocational agriculture I and the farm mechanics experiences received by the student teachers yielded an F

TABLE XXXV

ANALYSIS OF REGRESSION OF HOURS DEVOTED TO FARM MECHANICS IN VOCATIONAL AGRICULTURE I ON THE FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	1,963.69	1,963.69
Residuals	25	53,814.39	2,152.57
Totals	26	55,814.39	2,145.31
F value of the relationship between hours devoted to farm mechanics in vocational agriculture I and the farm mechanics experiences received		0.91	

value of 0.91. With the sample at hand an F value of 0.91 indicates that only a small portion of the variance is explained by the regression of hours devoted to farm mechanics in vocational agriculture I on farm mechanics experiences received. Therefore, the null hypothesis cannot be rejected.

Frequency distribution of hours of farm mechanics taught in vocational agriculture II. The data presented in Table XXXVI indicate that the mean hours of farm mechanics taught in vocational agriculture II was 39.11 hours. Thirty-three per cent of the supervising teachers indicated that they taught less than 30 hours of farm mechanics annually in vocational agriculture II, while 44.45 per cent indicated that they taught more than 29 but less than 50 hours of farm mechanics in vocational agriculture II. Six teachers, or 22.22 per cent, taught 50 or more hours of farm mechanics in vocational agriculture II.

TABLE XXXVI

FREQUENCY DISTRIBUTION OF HOURS OF FARM MECHANICS TAUGHT IN VOCATIONAL AGRICULTURE II IN 27 STUDENT TEACHING CENTERS

Class interval Hours taught	Student Teaching Centers	
	Number	Per Cent
70-Plus	3	11.11
50-69	3	11.11
30-49	12	44.45
10-29	9	33.33
Totals	27	100.00
Mean hours taught in vocational agriculture II	39.11	

Regression analysis of hours devoted to farm mechanics in vocational agriculture II on farm mechanics experiences received. The test for a significant relationship between hours devoted to farm mechanics in vocational agriculture II and the farm mechanics experiences received by

TABLE XXXVII

ANALYSIS OF REGRESSION OF HOURS DEVOTED TO FARM MECHANICS IN VOCATIONAL AGRICULTURE II ON THE FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	33.79	33.79
Residuals	25	55,744.29	2,222.98
Totals	26	55,778.08	2,222.98
F value of the relationship between hours devoted to farm mechanics in vocational agriculture II and farm mechanics experiences received		0.09	

the student teachers is shown in Table XXXVII. The F value of 0.09 is greatly below that required for significance at the five per cent level. Therefore, the null hypothesis cannot be rejected.

Frequency distribution of hours of farm mechanics taught in vocational agriculture III. In referring to table XXXVIII it is noted that the mean number of hours taught in vocational agriculture III was 46.52. Only 14.82 per cent of the supervising teachers indicated that they taught farm mechanics less than 30 hours annually, while 44.44 per cent of the teachers indicated that they taught more than 29 but less than 50 hours of farm mechanics in vocational agriculture III. Eleven, or 40.74 per cent, of the supervising teachers indicated that they taught 50 or more hours of farm mechanics in vocational agriculture III. It is noted that the hours devoted to farm mechanics increased from 36.81 hours annually in vocational agriculture I to 46.52 hours annually in vocational agriculture III. One supervising teacher indicated that he did not spend any time on farm mechanics in vocational agriculture III.

TABLE XXXVIII

FREQUENCY DISTRIBUTION OF HOURS OF FARM MECHANICS TAUGHT IN VOCATIONAL AGRICULTURE III IN 27 STUDENT TEACHING CENTERS

Class interval Hours taught	Student Teaching Centers Number	Per Cent
70-Plus	5	18.53
50-69	6	22.21
30-49	12	44.44
0-29	4	14.82
Totals	27	100.00
Mean hours taught in vocational agriculture III	46.52	

Regression analysis of hours devoted to farm mechanics in vocational agriculture III on farm mechanics experiences received. The test for a significant relationship between hours devoted to farm mechanics in vocational agriculture III and the farm mechanics experiences received by the student teachers is shown in Table XXXIX. The data shown in Table XXXIX yielded an F value of 0.49, which is greatly below that required for a significant relationship at the five per cent level. It is noted that the F value of relationship between hours devoted to farm mechanics

TABLE XXXIX

ANALYSIS OF REGRESSION OF HOURS DEVOTED TO FARM MECHANICS IN VOCATIONAL AGRICULTURE III ON THE FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	1,064.53	1,064.53
Residuals	25	54,713.55	2,188.54
Totals	26	55,778.08	2,145.31
F value of the relationship between hours devoted to farm mechanics in vocational agriculture III and farm mechanics experiences received		0.49	

and farm mechanics experiences received by student teachers was not significant for vocational agriculture I, II, or III, but that the F value was the greatest for vocational agriculture I and was the lowest for vocational agriculture II. The data shown in Table XXXIX sustains the acceptance of the null hypothesis.

Vocational agriculture departments having young farmer classes. The data presented in Table XL indicate that 70.37 per cent of the vocational agriculture departments in which student teaching was accomplished did not have organized young farmer classes. Only 29.63 per cent of the supervising teachers conducted classes for the young farmers of their community.

TABLE XL

VOCATIONAL AGRICULTURE DEPARTMENTS HAVING YOUNG FARMER CLASSES IN 27 STUDENT TEACHING CENTERS

Young farmer program	Supervising Teachers	
	Number	Per Cent
Yes	8	29.63
No	19	70.37
Totals	27	100.00

Farm mechanics experiences received in departments having or not having young farmer classes. As shown in Table XLI, a mean score of 64 was received by those student teachers who taught in departments having young farmer classes while a mean score of 48.05 was received by those students in departments not having young farmer classes. The mean difference of 15.95 between the scores received by the two groups has a t-value of 0.80. Although the student teachers in departments having young farmer classes received a greater score for their farm mechanics experiences than did the other group, the difference was not statistically significant at the five per cent level. The difference between the mean scores, although quite large, was not significant because of greater variation within each group than between the two groups. Therefore, the null hypothesis is accepted.

TABLE XLI

FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS IN DEPARTMENTS HAVING OR NOT HAVING YOUNG FARMER CLASSES

Response	Number	Degrees of Freedom	Mean Score	Sum of Squares
Yes	8	7	64.00	37,108
No	19	18	48.05	85,671
Totals	27	25		
t-value of difference between means			0.80	

Vocational agriculture departments having adult farmer classes. The data in Table XLII show that 66.67 per cent of the vocational agriculture departments included in this research study have organized adult farmer classes. Only 33.33 per cent of the departments did not conduct adult farmer classes. It is interesting to note that over twice as many departments had adult farmer classes as had young farmer classes.

TABLE XLII

VOCATIONAL AGRICULTURE DEPARTMENTS HAVING ADULT FARMER CLASSES IN 27 STUDENT TEACHING CENTERS

Aault farmer program	Supervising Teachers	
	Number	Per Cent
Yes	18	66.67
No	9	33.33
Totals	27	100.00

Farm mechanics experiences received in departments naving or not having adult farmer classes. Table XLIII indicates that a mean score of 55.55 was received by those student teachers in departments of vocational agriculture which had organized classes for adult farmers, while a mean score of 38.33 was received by those students who taught in departments where adult farmer classes were not conducted. The difference of 17.22 between the means of the two groups of students has a t-value of 0.91 which is not significant at the five per cent level. A possible reason that a difference of this magnitude was not significant is that there was more variation in the scores within each group than there was between the two groups. Therefore, the null hypothesis cannot be rejected.

TABLE XLIII

FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS IN DEPARTMENTS HAVING OR NOT HAVING ADULT FARMER CLASSES

Response	Number	Degrees of Freedom	Mean Score	Sum of Squares
Yes	18	17	55.55	101,804
No	9	8	38.33	20,975
Totals	27	25		
t-value of the difference between means			0.91	

Data Regarding the Characteristics of the Farm Mechanics Facilities of the Student Teaching Center

The characteristics concerning the farm mechanics facilities of the student teaching center were categorized into the following three items of consideration: (1) score for farm mechanics building, (2) score for farm mechanics equipment, and (3) departments sharing farm mechanics facilities with other high school departments.

Farm mechanics building facilities. During a visitation to each student teaching center, the farm mechanics building and equipment were scored using the schedule shown in Appendix A. Reference to Appendix A shows that a perfect score for either the building or the equipment was 39.

Data in Table XLIV indicate that the mean farm mechanics building score was 21.96. All 27 departments had a farm mechanics building. In most instances, it was a part of the vocational agriculture building or a part of the high school building. Scores for the farm mechanics buildings ranged from 10 to 39, with 15 departments receiving a score of less than 24 and 12 departments receiving a score of more than 23.

TABLE XLIV

FREQUENCY DISTRIBUTION OF THE SCORES FOR FARM MECHANICS BUILDING FACILITIES IN 27 STUDENT TEACHING CENTERS

Class interval Scores	Student Teaching Centers	
	Number	Per Cent
36-39	1	3.70
32-35	3	11.11
28-31	3	11.11
24-27	5	18.52
20-23	5	18.52
16-19	2	7.41
12-15	5	18.52
8-11	3	11.11
Totals	27	100.00
Mean farm mechanics building score	21.96	

Regression analysis of scores for farm mechanics building on farm mechanics experiences received. The test for a significant relationship between the farm mechanics building scores and the farm mechanics experiences received is shown in Table XLV. The data presented in Table XLV yielded an F value of 1.16 which is below that required for a significant relationship at the five per cent level. One might therefore conclude that the farm mechanics building facilities cannot be significantly associated with the quality, nature and extent of the farm mechanics experiences received by a student teacher of vocational agriculture. Therefore, the null hypothesis cannot be rejected.

TABLE XLV

ANALYSIS OF REGRESSION OF SCORES FOR FARM MECHANICS BUILDING ON THE FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	2,480.32	2,480.32
Residuals	25	53,297.76	2,131.91
Totals	26	55,778.08	2,145.31
F value of the relationship between farm mechanics building scores and farm mechanics experiences received		1.16	

Farm mechanics equipment. The data presented in Table XLVI show that the mean score for farm mechanics equipment was 21.59. Five student teaching centers received a score of less than 15 for their farm mechanics equipment, while 18 centers received a score of more than 14 but less than 30. Only four student teaching centers received a score of 30 or more for their farm mechanics equipment. One department, who also received a perfect score for its farm mechanics building, received a perfect score of 39 for its farm mechanics equipment. This particular department had a new building which was completely equipped for teaching farm mechanics. The writer observed in checking other data pertaining to this department that 89 per cent of the vocational agriculture students were non-farm boys.

TABLE XLVI

FREQUENCY DISTRIBUTION OF THE SCORES FOR FARM MECHANICS EQUIPMENT IN 27 STUDENT TEACHING CENTERS

Class interval Scores	Student Teaching Centers	
	Number	Per Cent
35-39	1	3.70
30-34	3	11.11
25-29	3	11.11
20-24	10	37.04
15-19	5	18.52
10-14	4	14.82
5- 9	1	3.70
Totals	27	100.00
Mean farm mechanics equipment score	21.59	

Regression analysis of scores for farm mechanics equipment on farm mechanics experiences received. Reference to Table XLVII shows that a test for the significance of the relationship between scores for farm mechanics equipment and the farm mechanics experiences received by the student teachers yielded an F value of only 0.04. An F value of only 0.04 is greatly below that required for a significant relationship at the five per cent level. Therefore, the null hypothesis cannot be rejected.

TABLE XLVII

ANALYSIS OF REGRESSION OF SCORES FOR FARM MECHANICS EQUIPMENT ON FARM MECHANICS EXPERIENCES RECEIVED BY 47 STUDENT TEACHERS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	94.11	94.11
Residuals	25	55,683.97	2,227.35
Totals	26	55,778.08	2,145.31
F value of the relationship between farm mechanics equipment scores and farm mechanics experiences received		0.04	

Vocational agriculture departments sharing farm mechanics facilities. Table XLVIII shows that 85.19 per cent of the supervising teachers indicated that they did not share the vocational agriculture farm mechanics facilities with other departments in the high school. Only 14.81 per cent of the departments shared their farm mechanics facilities with other high school departments.

TABLE XLVIII

VOCATIONAL AGRICULTURE DEPARTMENTS SHARING FARM MECHANICS FACILITIES WITH OTHER HIGH SCHOOL DEPARTMENTS IN 27 STUDENT TEACHING CENTERS

Facilities shared	Student Teaching Centers	
	Number	Per Cent
Yes	4	14.81
No	23	85.19
Totals	27	100.00

Farm mechanics experiences received in departments sharing or not sharing farm mechanics facilities. Table XLIX shows that a mean score of 33.25 was received by those student teachers who taught in departments where the farm mechanics facilities were shared with other high school departments. A mean score of 52.69 was received by those student teachers in departments where the farm mechanics facilities were not shared with other high school departments. The mean difference in scores between the two groups was 19.44. This has a t-value or 0.77 which is not significant at the five per cent level. Although the difference between the mean scores is quite large, the discrepancy in the size of the samples would attribute to a major portion of this difference. Therefore, the null hypothesis is accepted.

TABLE XLIX

FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS IN STUDENT TEACHING CENTERS SHARING OR NOT SHARING FARM MECHANICS FACILITIES

Facilities shared	Number	Degrees of Freedom	Mean Score	Sum of Squares
Yes	4	3	33.25	5,489
No	23	22	52.69	117,290
Totals	27	25		
t-value of difference between means			0.77	

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this chapter is to present a summary of the study, including the findings, and to present conclusions based upon the findings.

Problem of the Study

The principal problem of this study was to ascertain if certain selected factors common to vocational agriculture could be significantly associated with a student teaching program of farm mechanics.

The object of the study was to discover if certain selected factors were associated with the quality, nature and extent of farm mechanics experiences received by student teachers of vocational agriculture.

Methods and Procedure of the Study

The research project involved those students of agricultural education at Sam Houston State Teachers College who engaged in student teaching during the school year 1959-60. The research also included various Texas high schools which were approved as student teaching centers of vocational agriculture for Sam Houston State Teachers College during the school year 1959-60.

Data for this study were obtained by two methods. The personal interview technique was selected as the method of obtaining data concern-

ing various factors common to vocational agriculture which might have an effect on a student teaching program in farm mechanics. A daily farm mechanics activity schedule was selected as the method of obtaining data concerning the quality, nature and extent of farm mechanics experiences received by student teachers of vocational agriculture.

Fifty-seven Texas high schools were approved as student teaching centers of vocational agriculture for Sam Houston State Teachers College during the school year 1959-60. From a list containing the names of these high schools, each student teacher was allowed to choose the one in which he desired to do his teaching. From among the 57 approved high schools, 27 were used for programs of student teaching. The 27 student teaching centers utilized by the student teachers constituted the sample of student teaching centers serving as the population sample used in this study.

A personal interview was conducted with the teacher of vocational agriculture in each of the teaching centers. During this interview, the farm mechanics building and the farm mechanics equipment were scored. Information was obtained concerning the personal background characteristics of the teacher, the local school and community, and the characteristics of the local program of vocational agriculture.

The schedule used in interviewing the 27 supervising teachers of vocational agriculture was constructed with the assistance of the teacher training staffs in agriculture education at the Sam Houston State Teachers College and at the Oklahoma State University. The interview schedule was used to interview three individuals not included in the study for the purpose of checking for thoroughness and clarity. After the schedule was brought to its final form, it was used to interview the 27 teachers included in this study.

There was a total of 54 students who completed their student teaching requirements at Sam Houston State Teachers College during the school year 1959-60. Seven of these student teachers were omitted from the study to prevent bias in the data. This left a total of 47 student teachers who contributed information for use in this study regarding the farm mechanics experiences they received while engaged in student teaching.

Data regarding the farm mechanics experiences received by the 47 student teachers were obtained from a daily farm mechanics activity schedule which was maintained by the student teachers. This schedule was constructed with the assistance of agricultural education staff members at the Sam Houston State Teachers College and at the Oklahoma State University. Suggestions were also received from fellow graduate students and educational staff members when the research proposal was presented in a seminar session.

The daily activity schedules were presented to the student teachers in a meeting conducted before they went to their respective teaching centers. At the end of the student teaching period, the daily activity schedules were collected from the student teachers.

Summary of the Findings

The 47 student teachers included in this study received a total of 994 farm mechanics experiences while engaged in student teaching. Of the 994 experiences received, 657 or 67.90 per cent were received in the area of farm shop. Within the area of farm shop, 92 experiences were received at the number one level, 348 experiences were received at the number two level, 185 experiences were received at the number three level, and 32 experiences were received at the number four level.

A total of 70 experiences were received by the student teachers in the area of farm power and machinery. Twenty-five of these experiences were received at the number one level, 28 experiences were received at the number two level, and 17 experiences were received at the number three level. There were no experiences received at the number four level in the area of farm power and machinery.

Ninety-two experiences were received in the area of farm electrification. Ten experiences were received at the number one level, 43 experiences were received at the number two level, 35 experiences were received at the number three level and four experiences were received at the number four level.

In the area of farm buildings and conveniences, a total of 120 experiences were received by the student teachers. Over one-half of these experiences, or 73, were received at the number two level while 30 experiences were received at the number three level. Fifteen experiences were received at the number one level, while only two experiences were received at the number four level.

Fifty-five experiences were received in the area of soil and water management. Sixteen experiences were received at the number one level, 24 experiences were received at the number two level, and 15 experiences were received at the number three level. Not any soil and water management experiences were received at the number four level.

Of the 994 experiences received in all five areas of farm mechanics, 158 experiences were received at the number one level, 516 experiences were received at the number two level, 282 experiences were received at the number three level and only 38 experiences were received at the number four level.

After the data were obtained and tabulated, appropriate statistical treatments were made to test the stated null hypotheses. The level of significance required for refuting the null hypotheses in this research study was set at the five per cent level.

Hypotheses regarding personal background characteristics of the supervising teacher of vocational agriculture. Nine hypotheses were tested regarding the personal background characteristics of the supervising teachers. The following characteristics were tested for significance by the use of the analysis of regression. It was found that a significant relationship does not exist between the quality, nature and extent of farm mechanics experiences received by student teachers and the following factors;

(1) age of supervising teacher,

(2) years of teaching experience in vocational agriculture,

(3) years of teaching experience in present position,

(4) years of experience as a supervising teacher of vocational agriculture,

(5) years of vocational agriculture training received while enrolled in high school,

(6) undergraduate hours of college credit in farm mechanics courses, and

(7) graduate hours of college credit in farm mechanics courses.

The following personal background characteristics were tested for significance by the use of pooled variance. It was found that a significant difference does not exist between the farm mechanics experiences received by student teachers with regard to the following factors:

(1) teachers receiving farm mechanics training while enrolled in high school, and

(2) teachers receiving organized civilian mechanical training below the college level.

Hypotheses regarding characteristics of the local school and community. Four hypotheses were tested regarding characteristics of the local school and community. The following characteristics were tested for significance by the use of the analysis of regression. It was found that a significant relationship does not exist between the quality, nature and extent of farm mechanics experiences received by student teachers and the following factors:

(1) enrollment in high school,

(2) enrollment in all day classes in vocational agriculture, and

(3) per cent of vocational agriculture students who are farm residents.

The following characteristics were tested for significance by the use of pooled variance. It was found that a significant difference does not exist between the farm mechanics experiences received by student teachers with regard to the following factor:

(1) communities deriving 50 per cent or more of their income from farming.

Hypotheses regarding characteristics of the local program of vocational agriculture. Five hypotheses were tested regarding the characteristics of the local program of vocational agriculture. All five of the hypotheses proved tenable. The following factors were tested for significance by the use of the analysis of regression. It was found that a significant relationship does not exist between the farm mechanics experiences received by student teachers and the following factors:

(1) hours devoted to farm mechanics in vocational agriculture I,

(2) hours devoted to farm mechanics in vocational agriculture II,

(3) hours devoted to farm mechanics in vocational agriculture III,

The following characteristics were tested for significance by the use of pooled variance. It was found that a significant difference does not exist between the farm mechanics experiences received by student teachers with regard to the following factors:

(1) departments having adult farmer classes, and

(2) departments having young farmer classes.

Hypotheses regarding characteristics of the local farm mechanics facilities. Three hypotheses were tested regarding the characteristics of the local farm mechanics facilities. The data obtained sustained all three of the hypotheses. The following factors were tested for significance by the use of the analysis of regression. It was found that a significant relationship does not exist between the farm mechanics experiences received by student teachers and the following factors.

(1) farm mechanics building facilities, and

(2) farm mechanics equipment facilities.

The following characteristic was tested for significance by the use of pooled variance. It was found that a significant difference does not exist between the farm mechanics experiences received by student teachers with regard to the following factor:

(1) departments sharing farm mechanics facilities with other high school departments.

Conclusions

Since the nine hypotheses tested regarding the background characteristics of the supervising teacher proved acceptable, the conclusion

can be reached that under the conditions of this study the age of the teacher, years teaching experience, years taught in present position, years experience as a supervising teacher, years of vocational agriculture received while enrolled in high school, undergraduate hours of credit in farm mechanics, graduate hours of credit in farm mechanics, teachers receiving high school training in farm mechanics, and teachers receiving organized civilian mechanical training appear not to be conditioning factors regarding the quality, nature and extent of farm mechanics experiences received by student teachers of vocational agriculture.

According to the findings of this study, the enrollment of the high school, the enrollment of all day classes in vocational agriculture, and the per cent of vocational agriculture students who are farm boys appear not to be factors which may be associated with the farm mechanics experiences received by student teachers of vocational agriculture. The foregoing conclusion is further strengthened by the fact that data were obtained from student teaching centers where high school enrollments ranged from 62 to 1800 and where the percentage of vocational students who were farm boys ranged from 11 per cent to 100 per cent.

Regarding the characteristics of the local program of vocational agriculture, there is substantial evidence to assume that the hours devoted to farm mechanics in vocational agriculture I, in vocational agriculture II, and in vocational agriculture III, are not factors which may be associated with the quality, nature and extent of farm mechanics experiences received. The fact that programs of adult farmer and young farmer education were in operation are factors which one may also assume not to be significantly associated with the farm mechanics experiences received by a student teacher of vocational agriculture.

Further conclusions which may be reached are that characteristics pertaining to the farm mechanics building and the farm mechanics equipment appear not to be factors which may be associated with the quality, nature and extent of the farm mechanics experiences received by a student teacher of vocational agriculture. However, there would seem to be substantial evidence for the assumption that there are other factors than those mentioned above which may in fact be of influence in the variation of the farm mechanics experiences received by student teachers of vocational agriculture.

Since there was no significant association or difference discovered between the quality, nature and extent of the training program and the facilities of the departments, one can with some confidence, conclude that it is possible to provide a superior type of training in a department not necessarily having superior facilities. Similarily, since there was no association discovered between the training received and the personal characteristics of the supervising teachers, one can conclude that certain teacher characteristics are not necessarily a prerequisite for developing quality programs of student teaching in farm mechanics. At least it would seem reasonable to assume that the possession of certain qualities and characteristics at levels indicated by data secured does not constitute a deterrent to the development and maintenance of quality programs of student teaching in farm mechanics. Therefore, the findings of this study would tend to indicate that teacher trainers and teachers of vocational agriculture should be challenged to develop quality programs of student teaching in farm mechanics since it appears that they are not necessarily hampered by a lack of facilities or by a lack of certain teacher characteristics.

This study was not undertaken to establish a cause and effect

relationship, but to establish association or non-association of certain selected factors with the farm mechanics teaching experiences received by student teachers of vocational agriculture.

In regard to the nature and extent of farm mechanics experiences received, the results of this study strongly suggest that student teachers of vocational agriculture at present are not receiving a balanced program of teaching experiences in the area of farm mechanics. This is evidenced by the findings which show that over two-thirds of all experiences received were received in the area of farm shop, leaving less than one-third of the experiences received to be divided among farm power and machinery, farm electrification, farm buildings and conveniences, and soil and water management. Contrastively, the findings also suggest that some student teachers are not receiving a satisfactory student teaching program in farm mechanics since the data also revealed that six student teachers did not receive any farm mechanics experiences. It would seem of considerable consequence that less than one-half of the students achieved a total score of 50 or more while in two areas, farm shop and farm power and machinery, less than one-third of the students were provided opportunity for experiences above the number two level. Experiences at the number four level which included a critique session with student teachers concerning how the effectiveness of teaching might be improved was conducted following only 38 experiences out of a total of 994 experiences.

On the basis of observation, the investigator feels that there is some possibility that a few supervising teachers may consciously or unconsciously have shown a tendency to let student teachers teach in subject areas in which they did not especially like to teach themselves. This implication appears possible when one considers the fact that six

student teachers did not receive any experiences in farm mechanics, while one student teacher did not receive any experiences other than those received in the area of farm mechanics. This implication was perhaps somewhat further strengthened as a result of a number of personal interviews conducted with the supervising teachers.

Since the wide differences in the quality or level of experiences provided in various centers are so apparent, it would seem that teacher educators as well as supervising teachers might well profit from the implications so identified. Perhaps all persons involved can be challenged to provide a program of training which is maintained at a high level. The fact that the quality of the facilities is not associated with the quality of the program should actually be encouraging to those whose possibilities of securing more adequate facilities are less than they might desire. It was further brought out by observation that a great many of the supervising teachers were quite concerned with providing a training program of maximum effectiveness. The enthusiasm of these supervising teachers can perhaps be cited by teacher educators as evidence that very few supervising teachers are consciously or unconsciously using the student teacher's services as a convenience.

The results of the investigation show that there is some basis to believe that departments having organized young and adult farmer classes may contribute toward the quality, nature and extent of farm mechanics experiences received by student teachers. Although there was not a significant difference between the mean scores of students who taught in departments having adult and young farmer classes, and in departments not having adult and young farmer classes, the differences in the mean scores were quite large in favor of those students who taught in departments having organized adult and young farmer classes. One might

conclude that although there was not a significant difference between the mean scores received, there is a possibility that the factors of having adult and young farmer classes could have some bearing upon the farm mechanics experiences received, particularly when the maintenance of such programs may occur in combination with other factor patterns.

Although one factor, such as departments having adult farmer classes, was not significantly associated with the farm mechanics experiences received, it might be possible that a combination of two or more factors would enable one to discern between student teaching programs in farm mechanics with regard to possible association with certain factor combinations.

The findings of this investigation imply that factors, other than those tested in the 21 stated hypotheses, are associated with the farm mechanics experiences received by student teachers of vocational agriculture. The investigator feels that with the elimination of a number of possible associated factors as a result of this study, the evidence is strengthened that the interest, initiative, and personality of the supervising teacher and of the student teacher are probably the critical factors determining the extent and quality level of the student teaching program in farm mechanics. No doubt, this implication should prove challenging to teachers, teacher educators and supervisors of vocational agriculture.

A SELECTED BIBLIOGRAPHY

Curtis, Charlie M. "Some Factors Affecting the Teaching of Farm Mechanics." Unpublished Doctoral Dissertation, Louisiana State University. 1958.

Dry, Clifton Aaron. "A Study of Apprentice Teaching Activities in Twelve Southern States." Unpublished Master's Thesis, Louisiana State University. 1949.

Garret, Henry E. Statistics in Psychology and Education. New York: Longmans, Green and Company. 1953.

Hobbs, Walter W. "Factors Associated With the Occurrence of Effective Local Farm Mechanics Programs in Vocational Agriculture in Oklahoma." Unpublished Doctoral Dissertation, Oklahoma State University. 1960.

Kennedy, Luke D. "A Research to Determine the Activities of Practice Teachers." Unpublished Master's Thesis, Sam Houston State Teachers College. 1952.

Kirkland, Bryant J. "Teacher Preparation in Agricultural Education." Agriculture Education Magazine, XXIV, No. 4 (October, 1951).

Lechner, Fred G. "Factors Influencing the Experiences of Student Teaching." Agriculture Education Magazine, XXV, No. 9 (March, 1953).

Longhurst, Robert M. "A Dynamic Farm Mechanics Curriculum for a Changing Agriculture." Agriculture Education Magazine, XXXII, No. 7, (January, 1960).

Miller, J. C. "A Study of the Activities Engaged in by Prospective Teachers of Vocational Agriculture while in Teaching Centers." Unpublished Nonthesis Study, Department of Agriculture Education, Oklahoma A & M College, 1950.

Nicholson, Bonnie. "A Study of Farm Shop Buildings and Equipment." Unpublished Nonthesis Study, Department of Agriculture Education, Oklahoma A & M College, 1939.

Phipps, Lloyd J. "Internship for Prospective Teachers of Vocational Agriculture in Illinois." Unpublished Doctoral Dissertation, University of Illinois, 1949.

Price, Robert R. "Factors Associated With the Occurrence of Local Young Adult Farmer Instructional Programs in Vocational Agriculture in the States of Oklahoma and Pennsylvania." Unpublished D. Ed. Dissertation, Pennsylvania State University, 1955.

Schultz, Raymond E. Student Teaching in the Secondary Schools. New York: Harcourt, Brace and Co., 1959.

United States Office of Education. Instruction in Farm Mechanics. Washington, D. C.: Government Printing Office, 1957.

_____. "Agricultural Engineering Phases of Teacher Education in Agriculture." Journal of the American Society of Agricultural Engineers, XL, No. 6 (June, 1960).

APPENDIXES

APPENDIX A

Schedule A

POSSIBLE FACTORS ASSOCIATED WITH THE QUALITY, NATURE AND EXTENT OF FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Interview Schedule

A. PERSONAL CHARACTERISTICS:

Name_____

1. Age_____
2. Marital status_____
3. Years taught vocational agriculture_____
4. Years taught in present position_____
5. Years as supervising teacher_____
6. Education (highest degree attained)_____
7. Degrees obtained from:_____B. S.,

_____M. S.,_____

Doctors.

8. Years of vocational agriculture completed in high school_____
9. Received farm mechanics training in high school (Yes - No)_____
10. Received mechanical training other than high school or college (Yes - No)_____. If so, specify_____
11. Number of undergraduate hours credit in farm mechanics_____
12. Number of graduate hours credit in farm mechanics_____

B. CHARACTERISTICS OF THE LOCAL SCHOOL AND COMMUNITY:

1. Name of school_____
2. Enrollment in high school_____

3. Enrollment in vocational agriculture_____

4. Number of vocational agriculture students who live on a farm

_____

5. Number of vocational agriculture students who do not live on a farm_____

6. Most important agricultural enterprises in community:

(a)_____

(b)_____

(c)_____

7. Does the community receive 50% or more of its income from farming? (Yes - No)_____

C. CHARACTERISTICS OF THE LOCAL PROGRAM OF VOCATIONAL AGRICULTURE:

1. Hours devoted to farm mechanics in vocational agriculture I

_____

2. Hours devoted to farm mechanics in vocational agriculture II

_____

3. Hours devoted to farm mechanics in vocational agriculture III

_____

4. Department has an organized young farmer program (Yes-No)_____

5. Department has an organized adult program (Yes-No)_____

D. CHARACTERISTICS OF THE FARM MECHANICS FACILITIES:

1. Score for farm mechanics building (Taken from attached score card) _____

2. Score for farm mechanics equipment (Taken from attached score card) _____

3. Are farm mechanics facilities shared with other school departments (Yes - No) _____

E. REMARKS:

FARM MECHANICS EQUIPMENT
SCORE CARD

TYPE OF EQUIPMENT	Excellent 3	Good 2	Fair 1	None 0	Score *
1. Wood Working Equipment					
2. Pipe Working Equipment					
3. Electrical Equipment					
4. Farm Shop Power Machinery					
5. Arc Welding Equipment					
6. Gas Welding Equipment					
7. Cold Metal Equipment					
8. Hot Metal Equipment					
9. Farm Mach. Repair Equip.					
10. Concrete & Masonry Equip.					
11. Soldering Equipment					
12. Painting Equipment					
13. Land Engineering Equip.					
			TOTAL		

* 0-None - Refers to no equipment available.

1-Fair - Refers to some equipment but inadequate to fully meet the needs of the class.

2-Good - Refers to equipment slightly below the standard as to quality, quantity and type.

3-Excellent - Refers to equipment fully meeting standards of quality, quantity and type.

FARM MECHANICS BUILDING
SCORE CARD

TYPE OF FACILITY	Excellent 3	Good 2	Fair 1	None 0	Score*
1. Building					
2. Heating					
3. Ventilation					
4. Lighting					
5. Storage Facilities					
6. Wash Room					
7. Lockers					
8. Toilet Facilities					
9. Electrical Wiring					
10. Tool Room or Wall Panels					
11. First Aid Equipment					
12. Fire Extinguishers					
13. Outside Working Space					
			TOTAL		

* 0-None - Refers to no facilities available.

1-Fair - Refers to facilities inadequate to fully meet the needs of the class.

2-Good - Refers to facilities slightly below the standard as to quality, quantity and type.

3-Excellent - Refers to facilities fully meeting standards of quality, quantity and type.

Schedule B

THE QUALITY, NATURE AND EXTENT OF FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

Daily Farm Mechanics Activity Report

FARM SHOP

SUBJECT	DEGREE OF EXPERIENCE				
	1	2	3	4	Score *
			TOTAL		

* 1-Observed another instruct

2-Supervised class

3-Formally instructed class

4-Formally instructed class followed by critique

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FARM POWER AND MACHINERY

SUBJECT	DEGREE OF EXPERIENCE				
	1	2	3	4	Score *
TOTAL					

* 1-Observed another instruct

2-Supervised class

3-Formally instructed class

4-Formally instructed class followed by critique

FARM ELECTRIFICATION

SUBJECT	DEGREE OF EXPERIENCE				
	1	2	3	4	Score *
TOTAL					

* 1-Observed another instruct

2-Supervised class

3-Formally instructed class

4-Formally instructed class followed by critique

FARM BUILDINGS AND CONVENIENCES

SUBJECT	DEGREE OF EXPERIENCES				
	1	2	3	4	Score *
TOTAL					

* 1-Observed another instruct

2-Supervised class

3-Formally instructed class

4-Formally instructed class followed by critique

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SOIL AND WATER MANAGEMENT

SUBJECT	DEGREE OF EXPERIENCE				
	1	2	3	4	Score *
TOTAL					

* 1-Observed another instruct

2-Supervised class

3-Formally instructed class

4-Formally instructed class followed by critique

APPENDIX B

TEACHERS COOPERATING IN STUDY

Teacher	School
Mr. T. E. Cummings	Alto
Mr. Edwin Smith	Cleveland
Mr. J. E. Lockhart	Clifton
Mr. Tex Tyler	Crosby
Mr. L. P. Griffis	Deport
Mr. Hugh Brown	Eastland
Mr. Jack Cely	Fairfield
Mr. George Hoggard	Groveton
Mr. Wayne Forrest	Howley
Mr. Haney Daniel	Hudson
Mr. Paxton Hall	Huntsville
Mr. J. E. Seamans	Livingston
Mr. Huston Diaton	Lovelady
Mr. E. N. Trant	Madisonville
Mr. T. J. Honeycutt	Marlin
Mr. Dale Brown	Mexia
Mr. James Permenter	Midlothian
Mr. Elvin Wright	Needville
Mr. Rex White	New Waverly
Mr. J. W. Reed	O'Donnell
Mr. J. C. Etherdge	Pasadena
Mr. E. C. Schneider	Roscoe
Mr. Gene Sollock	South Houston

Mr. Herman Bostick	Tarkington
Mr. W. L. Davis	Texas City
Mr. Dwight Hine	Trinity
Mr. G. D. Wren	Wortham

APPENDIX C

STUDENT TEACHERS COOPERATING IN STUDY

Mr. Leon Bagwell
Mr. Robert Ballard
Mr. Raymond Barnes
Mr. Hibert Beck
Mr. Kenneth Beene
Mr. William Berkley
Mr. Barron Bird
Mr. James Blakely
Mr. Kermit Blezinger
Mr. James Boley
Mr. Marvin Burns
Mr. Harlen Camp
Mr. James Cannon
Mr. John Duncum
Mr. Clarke Evans
Mr. Winfred Finke
Mr. Billy Freeman
Mr. J. M. Golding
Mr. Ben Green
Mr. Johnny Grissom
Mr. Joe Hagan
Mr. Nelton Hollis
Mr. Bobby House
Mr. Jo Jackson
Mr. Sonny Jamison
Mr. Terry Keeling
Mr. D. M. Lloyd
Mr. S. E. Long
Mr. Don Love
Mr. Lee Lys, Jr.
Mr. Jay Marek
Mr. Charles McDaniel
Mr. Royce Moffett
Mr. Charles Newton
Mr. Johnny Nichols
Mr. John Parker
Mr. Max Plata
Mr. Charles Rhodes
Mr. Holley Stephenson
Mr. Ben Strickland
Mr. Kenneth Stuessel
Mr. Marvin Sulak
Mr. Billy Sullins
Mr. Hans Wimberly
Mr. Bobby Winters
Mr. Garlyn Wilburn
Mr. Raiford Williams

VITA

Eddie Lynn Dye

Candidate for the Degree of

Doctor of Education

Thesis: AN ANALYSIS OF FACTORS ASSOCIATED WITH THE QUALITY, NATURE AND EXTENT OF FARM MECHANICS EXPERIENCES RECEIVED BY STUDENT TEACHERS OF VOCATIONAL AGRICULTURE

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Biographical:

Personal data: Born near Seminole, Oklahoma, November 7, 1930, the son of Jesse E. and Hattie B. Dye.

Education: Attended grade school at Nicoma Park and Choctaw, Oklahoma; graduating from Choctaw High School in 1948. Received the Bachelor of Science Degree from the Oklahoma State University, in 1956, with a major in Agricultural Education. Graduated from the Oklahoma State University in May, 1958, with a Master of Science Degree in Agricultural Education. Additional graduated work was completed at the University of Houston in 1959, and at the Texas Agricultural and Mechanical College in 1960. Requirements for the Doctor of Education Degree were completed at the Oklahoma State University in May, 1961.

Professional Experience: Served on active duty as a commissioned officer in the United States Air Force from 1951 to 1955. Taught vocational agriculture in the Ralston High School, Ralston, Oklahoma 1956 to 1957; Assistant Professor in the Vocational Agriculture Department at the Sam Houston State Teachers College since September, 1958.