

ADMINISTRATIVE PRACTICES AND COSTS OF PROVIDING
CONSUMABLE SUPPLIES AND MATERIALS FOR
FARM SHOP INSTRUCTION IN OKLAHOMA
VOCATIONAL AGRICULTURE
DEPARTMENTS

BY

HOWARD ROBERT TERRY

Bachelor of Science

Oklahoma State University

1959

Submitted to the Faculty of the Graduate School of
the Oklahoma State University in partial
fulfillment of the requirements
for the Degree of
MASTER OF SCIENCE
August, 1962

100-100000

100-100000

100-100000
100-100000
100-100000
100-100000

Thesis
1962
1929a
1962

100-100000
100-100000
100-100000
100-100000

100-100000
100-100000
100-100000

100-100000
100-100000
100-100000
100-100000

NOV 13 1962

ADMINISTRATIVE PRACTICES AND COSTS OF PROVIDING CONSUMABLE
SUPPLIES AND MATERIALS FOR FARM SHOP INSTRUCTION IN
OKLAHOMA VOCATIONAL AGRICULTURE DEPARTMENTS

THESIS APPROVED:

Eugene W. Edinger

Thesis Adviser

Robert R. Price

Robert M. Madsen

Dean of the Graduate School

ACKNOWLEDGEMENT

I wish to express my appreciation to my advisors, Dr. Robert R. Price and Dr. Everett Edington for their encouragement, guidance and aid in preparing this study.

Indebtedness is also acknowledged to the vocational agriculture instructors and superintendents of schools who cooperated in this study. Especially do I want to thank the six vocational agriculture instructors who provided records for use in the case studies.

Finally, I wish to express my sincere appreciation to my wife, Barbara, for her sacrifices and constant interest, encouragement and assistance in the formulation of this study.

H.R.T.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION.....	1
Statement of the Problem.....	2
Purpose of the Study.....	2
Scope of the Study.....	3
Definition of Terms.....	3
Procedure.....	4
II. REVIEW OF SELECTED LITERATURE.....	6
III. PRESENTATION AND ANALYSIS OF DATA.....	11
A. Case Studies.....	12
B. Factors Affecting Nature and Extent of Farm Shop Program.....	17
C. Comparisons Between Administrative Preferences of Superintendents and Vocational Agriculture Instructors.....	27
D. Data Pertaining to Operation of Farm Shop Programs.....	34
A SELECTED BIBLIOGRAPHY.....	62
APPENDIX.....	63
A. Letter Sent to Superintendents.....	63
B. Superintendent Questionnaire.....	64
C. Letter Sent to Vocational Agriculture Instructors.....	65
D. Vocational Agriculture Instructor Questionnaire.....	66
E. Letter Sent to Case Study Cooperators.....	71
F. Case Study Inventory Record Form.....	72
G. Case Study Purchase Record Form.....	74

LIST OF TABLES

TABLE	PAGE
I. Cost Per Student of Consumable Farm Shop Supplies From Eight Selected Oklahoma Vocational Agriculture Departments.....	12
II. Cost of Consumable Supplies Per Student Hour of Farm Shop Instruction in Eight Selected Oklahoma Vocational Agriculture Departments.....	15
III. Administrators' Opinions of Factors Limiting the Nature and Extent of the Farm Shop Program on the Local Level.....	17
IV. Effect of Superintendents' Opinions That Cost of Farm Shop Program is Limiting Factor on Amount of Time Spent Teaching Selected Skills.....	18
V. Relationship of the Size of the Farm Shops to the Nature and Extent of the Farm Shop Program.....	21
VI. Comparison of Years of Teaching Experience to the Nature and Extent of the Farm Shop Program.....	24
VII. Amount of Farm Shop Financing Provided by FFA Earnings Compared With the Degree of Farm Shop Financing Administrators Favor Being Provided by FFA Earnings.....	26
VIII. Amount of Farm Shop Fees Students Pay in Comparison to the Degree of Farm Shop Financing Superintendents Favor Being Provided by Student Fees.....	29
IX. Administrators' Preferences of Groups Allowed to Use Farm Shop Facilities Compared With Use by Groups Reported by Vocational Agriculture Instructors.....	32
X. Vocational Agriculture Departments' Fee Policies Regarding Persons Using Farm Shops.....	34
XI. Number of Schools Having Established Vocational Agriculture Budgets Within the Total School Budget.....	36
XII. Preferences of Vocational Agriculture Instructors Regarding A Separate Farm Shop Budget As Opposed To A Total Vocational Agriculture Budget.....	38
XIII. Comparison of the Proportion of Cost of Consumable Supplies Charged Students Using Them With the Amount of Farm Shop Fees Paid.....	39

XIV.	Comparison of the Per Cent of Entire Cost of Materials and Supplies for Non-instructional Uses Charged Students With the Amount of Farm Shop Fees Paid.....	42
XV.	Farm Shop Financial Records Kept by Vocational Agriculture Instructors.....	43
XVI.	Number of Schools Using Established Cost Lists For Farm Shop Consumable Supplies.....	45
XVII.	Time Payment Should Be Made For Farm Shop Consumable Supplies Used.....	46
XVIII.	Receivers of Payments For Farm Shop Consumable Supplies and Materials.....	47
XIX.	Proportion of Farm Shop Consumable Supplies Purchased In Advance of Need.....	49
XX.	Items of Farm Shop Consumable Supplies Purchased in Advance of Need.....	50

CHAPTER I

INTRODUCTION

Today's farmer has been termed an "unspecialized mechanic". That is to say, he must be able to cope with a great variety of mechanical problems brought about as a result of the increased mechanization in agriculture. It is not uncommon for a farmer to have 50% of his farming investment tied up in machinery and equipment. With the ever-increasing mechanization of farming, a farmer cannot be a success unless he possesses considerable mechanical knowledge and skill.

Vocational agriculture instructors and community leaders in Oklahoma are very much aware of these mechanical changes in agriculture and are meeting the issues squarely. Not only are the State's future farmers being trained to meet this challenge of mechanized agriculture, but also a great deal of farm mechanics training is being afforded young and adult farmers. At the present time, Oklahoma has 386 departments of Vocational Agriculture manned by 395 instructors. 340 of these departments are equipped with farm shop facilities for the training of future, young and adult farmers in the maintenance, repair and construction of labor saving devices now so prevalent in Oklahoma agriculture.

This mechanization of agriculture, coupled with the need of training personnel to fill openings in related occupations, has placed a great deal of emphasis upon the farm mechanics program in vocational agriculture. The number of departments maintaining farm shop facilities would indicate an

acknowledgement of this trend toward more farm shop instruction.

Problems, however, have accompanied this new emphasis upon farm mechanics instruction. The primary problem encountered would seem to be the administering, or managing, of a program of instruction in farm mechanics. Under this heading of administration would fall such problems as determining the nature and extent of the course, financing the program, purchasing and maintaining supplies and equipment, and performing managerial jobs such as record keeping.

The increased emphasis upon farm mechanics instruction and the problems it presents, prompted this study.

Statement of the Problem. The increased demand for farm mechanics instruction due to a mechanized agriculture, has brought with it some changes within the area of farm mechanics instruction. In Oklahoma, the major emphasis of the farm mechanics program has been placed upon the farm shop phase of instruction. That is, all phases of hot and cold metal work including welding, pipe and bolt cutting and threading, bending and shaping metal, metal project construction, farm carpentry project construction, farm machinery repair, maintenance, and construction, constitute the farm mechanics program in operation in a majority of Oklahoma vocational agriculture departments.

This area of instruction involves the greatest expense for a farm mechanics program outside of investments for power equipment and buildings. The problem of this study will deal with the administrative policies and practices of Oklahoma vocational agriculture farm mechanics programs and the factors affecting some of these practices and policies.

Purpose of the Study. The purposes of this study are: (1) To deter-

mine the administrative policies and practices used in financing a farm mechanics program and some of the factors affecting them; (2) To compute an average cost per student hour of instruction in farm shop for consumable supplies and materials; (3) To determine the type of relationship that exists between the administrative preferences of the superintendent of schools and the actual administrative policies and procedures being used in the vocational agriculture department; (4) To obtain information relating to the operation and maintenance of a farm shop program in vocational agriculture.

Scope of the Study. This study is limited to the farm shop phase of the farm mechanics program.

The schools selected for the case studies to determine the costs of consumable supplies per student hour of instruction in farm shop were selected because of their locality and also because it was felt that they would be typical of departments found in the state.

An attempt was made to secure the remainder of the information from superintendents and vocational agriculture instructors representing departments over the entire state. A questionnaire, letter of explanation, and a stamped, self-addressed return envelope was included to both of these people in each of 70 schools selected at random from the five supervisory districts in the state. This gave a representative sample of departments across the state.

Definition of Terms:

Farm Shop. Refers to those areas of instruction including; electric arc and oxygen-acetylene or propane welding and cutting; bolt and pipe cutting; bolt and pipe cutting and threading; metal project construction; farm carpentry project construction; and farm machinery repair.

Welding Skills and Practices. Includes electric arc welding, oxygen-acetylene welding, oxygen-propane and/or oxygen-acetylene cutting, brazing and hard surfacing.

Consumable Supplies. These are the supplies used in construction and/or instruction work in the farm shop areas listed under the definition of farm shop. They include; welding electrodes and rods, oxygen, acetylene, or propane gases, bolt stock, pipe, nails, paint, lumber, and some hand tools and other supplies.

High School or All-Day Students. Regularly enrolled all-day high school vocational agriculture students.

Young Farmers. An organized group of young men who attend the organized classes designed to help them become established and to advance in farming through systematic instruction.

Adult Farmers. An organized group of older farmers who are enrolled in a class providing instruction in practical farm problems and activities.

Procedure. In order to achieve the purposes of this study as stated previously, the procedure followed included:

1. The development of the questionnaires and case study inventory and purchase record forms.
 - a. Selected literature on development of questionnaires was reviewed.
 - b. The final superintendent questionnaire, vocational agriculture instructor questionnaire, and case study inventory and purchase record forms were approved. (Shown in Appendices, B, D, E, and G respectively.)
2. Schools to participate in case studies were selected and interviewed by the writer.

3. Case study inventory and purchase record forms were mailed to participating schools along with a letter of explanation.
4. A list of all schools having vocational agriculture departments was obtained from the State Department for Vocational Agriculture and a random selection by supervisory districts was made.
5. Questionnaires were mailed to both the superintendent and vocational agriculture instructor in 14 schools of each supervisory district, 70 total schools.
6. The results of these surveys were tabulated, compiled, and analyzed.
7. A summary of the findings, conclusions of findings, and possible recommendations were made.

CHAPTER II

REVIEW OF SELECTED LITERATURE

A review of selected literature was made to obtain information useful in the formulation and development of the study.

Cook, Scranton, and McColley¹ list the following advantages of good farm mechanics training:

- ✓ 1. It provides one of the strongest agencies in convincing the students, superintendents, school boards and faculty and members of the community of the need for giving continued and enthusiastic support to the program of vocational education in agriculture.
2. It provides training in skills that are necessary to do the needed farm mechanics jobs on the farm.
3. It gives students an opportunity to do purposeful thinking, as well as to use their hands in mastering real problems of everyday life.
4. It helps the student, after the job is done, to realize that it is practical, and that he has really accomplished something.
5. It is one of the best ways of motivating and stimulating students' interest, as students especially like this phase of work.
6. It adds variety to the vocational program.
7. It provides the type of training needed by all-day, young farmers, and adult farmers.
8. It provides training based on individual need.
9. It produces immediate results.

Warren² stated in his study that there appears to be an added emphasis upon including farm mechanics instruction in vocational agriculture. Fifty-six per cent of the schools in his report have established farm mechanics

¹G. C. Cook, L. L. Scranton and H. F. McColley, Farm Mechanics Text and Handbook. (Danville, Illinois: The Interstate Printing Company, 1956.)

²Orval Ray Warren, "Farm Mechanics Laboratories for Oklahoma", (Unpub. M.S. Report, Oklahoma State University, Stillwater, 1962.)

programs in vocational agriculture within the past ten years.

This increasing emphasis upon farm mechanics training has brought with it several problems. Namely, the administration of such a program. The administration of a farm shop program would involve such things as formulating the nature and extent of the program, establishing financial procedures and policies, and securing and managing equipment and supplies. It is with these problems that this study will attempt to deal.

The findings of Hobbs'³ study emphasize clearly the implication that the teacher-with his initiative, drive, interest, enthusiasm, attitude, perserverence, and personality-is probably the critical factor in the establishment of a successful program of instruction in farm mechanics. Differences between department service areas as to size of farms, type of farming, value of land, type of livestock or crop enterprises, and mechanization of farms did not affect the farm mechanics programs of these schools.

Most school administrators are conscious of costs in school operation and certainly, the nature and extent of a farm mechanics would influence the costs of such a program.

Quite often these administrators are not able to understand the cost figures placed upon farm mechanics. This is largely due to the administrator not being properly informed. T. J. Wakeman⁴ in a survey of the southern region of Virginia, found that some administrators felt that

³Walter Wesley Hobbs, "Factors Associated with the Occurence of Effective Local Farm Mechanics Programs in Vocational Agriculture in Oklahoma," (Unpub. Doctor's Dissertation, Oklahoma State University, Stillwater, 1960.)

⁴T. J. Wakeman, "Farm Mechanics for School and On the Farm", (Better Farming Methods Magazine, March, 1957, pp. 64-65.)

fifty cents per student was enough allocation for a farm mechanics program while others felt that \$20.00 per student is a reasonable amount for this program. It depends upon how well the administrator understands the need and is able to visualize the benefits to be derived from adequate funds. Keeping administrators informed cannot be over-emphasized as a factor for success in the operation of a vocational agriculture farm shop program, or for that matter, for the total vocational agriculture program.

In an article in the Agricultural Education Magazine, Lowell D. Satterlee⁵ stated that the vocational agriculture instructor should have weekly conferences with the administrator for the purpose of informing him and enlisting his help in improving the instructional program. The teacher should not wait for the administrator to request information on the activities of the department.

This exchange of information should extend through all phases of the farm mechanics program. Since finance of a farm shop program is usually of concern to administrators, the vocational agriculture instructor should discuss these finance plans with the superintendent. Lee W. Doyen⁶ pointed out in his study that the budget estimate for vocational agriculture should be submitted in time to be considered for the total school budget and that the teacher should meet with the administrator to discuss budget estimates.

A review of literature regarding administrative policies and practices

⁵Lowell D. Satterlee, "Kansas Administrators Participation in Policy Making of the Vocational Agriculture Program", The Agricultural Education Magazine, December, 1960, pp 128-129.

⁶Lee W. Doyen, "The Present and Recommended Methods of Financing Instruction in Farm Mechanics Programs in the South Central District of Kansas", (Unpub. M.Ed. Report, Colorado Agricultural and Mechanical College, Fort Collins, 1953.)

in handling the costs of a farm shop program revealed that this is an area in which improvement should be made.

As quoted earlier, Doyen's study arrived at the administrative policies listed below.

1. A receipt should be issued for money paid for supplies.
2. The instructor should keep a financial record book of the department.
3. An audit of the department budget should be made once each year.
4. A revolving fund should be provided.
5. A continuous inventory should be kept.
6. The instructor should be responsible for seeing that money due the department is collected.
7. The teacher should serve as purchasing agent for the department.
8. The farm mechanics department should maintain supplies for project construction and the teacher should have charge of issuing supplies.
9. The student should pay for supplies when the project is finished.

In his 1957 thesis, Hopper⁷ reached the following conclusions concerning the administrative policies being practiced in South Carolina farm shops.

1. Many teachers were not keeping adequate records of vocational agriculture department funds.
2. A small number of schools reported; having a budget, charging student shop fees, having a reserve fund, or having a revolving fund.
3. Very few departments reported funds being audited.
4. 75% of the teachers were opposed to using funds from other sources to buy supplies for farm shop.

⁷James Edsel Hopper, "The Methods and Administrative Procedures Used in Financing the Costs of Consumable Supplies and Equipment in Farm Mechanics Instruction in Vocational Agriculture Departments in South Carolina," (Unpub. M. S. Thesis, Clemson College, Clemson, South Carolina, 1957.)

5. 80% of the teachers favored including the vocational agriculture budget within the total school budget.
6. 83% of the teachers felt that inventory records should be kept.
7. 50% felt the school and students should share in expenses for supplies.
8. 34% of the teachers felt that a shop fee should be charged to all-day students and other persons using shops.

The results of these two studies bear out the findings of Zollinger⁸, that there was a definite lack of uniformity in existing standards in handling shop supplies. Cooperating teachers were anxious to receive help in this phase of farm mechanics.

Because the studies of Doyen and Hopper fail to bear out and reinforce the findings of each other, it was decided to launch this study in an effort to determine what administrative practices are being carried out in Oklahoma vocational agriculture farm shop programs. This coupled with the fact that very few studies of this nature have been carried out promoted the initiation of this new research study into the matter.

⁸Clinton David Zollinger, "Criteria for Evaluating Procedures and Techniques Used in Handling Supplies in Farm Mechanics Departments in Utah High Schools" (Unpub. M. Ed. Thesis, Utah State Agricultural College, Logan, Utah, 1955.)

CHAPTER III
PRESENTATION AND ANALYSIS OF DATA

Data presented in the first part of this chapter were obtained from case studies of eight Oklahoma vocational agriculture departments' farm shop programs. The instructors in these schools kept an inventory record and a record of purchases for consumable supplies during the school year 1961-1962. These schools were selected because of their proximity to the author's home and because they all had an effective farm shop program in operation. Additional data presented in this chapter were obtained from questionnaires sent to both the superintendent and vocational agriculture instructor in each of 70 schools. In cases where a questionnaire was returned by both the superintendent and his vocational agriculture instructor, a comparison was made to determine how closely the policy preferences of the superintendent and the policies being practiced in the vocational agriculture department were in agreement. It will be noted that in almost every instance, there is a difference in the number of replies. This is due to some replies not being complete in all areas.

In addition to the comparisons listed above, comparisons were made concerning possible limiting factors to the nature and extent of the farm shop program which would affect costs of consumable supplies. Also, comparisons were made concerning financial policies within the vocational agriculture department.

Other data presented within this chapter are of a descriptive nature

and are intended to illustrate administrative policies and practices used in vocational agriculture farm shops in this study. The data were analyzed and tabulated and are presented in this chapter.

TABLE I

"CASE STUDIES"

COST PER STUDENT OF CONSUMABLE FARM SHOP
SUPPLIES FROM EIGHT SELECTED OKLAHOMA
VOCATIONAL AGRICULTURE DEPARTMENTS

<u>School</u>	<u>Value of Consumable Supplies Used</u>	<u>Number of Students Receiving Farm Shop Instruction</u>	<u>Cost Per Student For Consumable Supplies</u>
A	\$845.24	16	\$52.83
B	453.65	38	11.94
C	143.54	29	4.95
D	380.15	42	9.05
E	469.80	21	22.37
F	451.17	49	9.21
G	322.84	14	23.06
H	286.00	29	9.86

Data indicate that the average expenditure per student for farm shop consumable supplies in the eight selected departments was \$17.91. The range of expenses per student is from \$52.83 to \$4.95. Schools A, E, and G ranked well above the other five schools with an average expenditure per student of \$32.75 compared with an average expense of \$7.00 for the other five schools in this study. The average enrollment of the three schools

showing above average expenses was 17 students or 21.4% of the total enrollment while the other five schools had an average enrollment of 37 students per school.

The total average expenditure for consumable supplies for schools A, E, and G is \$545.96. The total amount spent by these three schools for consumable supplies is equal to 46% of the total amount spent by the eight schools in this study.

The total amount of expenditures for consumable supplies in the eight schools in this section of the study amounted to \$3,352.39. Expenses for metals and materials used both in instruction and construction represented the largest single item of expense. A total of \$1,713.40 or 51% of the total consumable supply expenditure was used for metals and materials. Oxygen and acetylene or oxygen and propane for welding and cutting metals accounted for \$721.52 or 22% of the total consumable supply expense. Five-hundred-forty-six dollars and twenty-seven cents was spent for arc welding electrodes and/or oxygen-acetylene welding rods which represented 17% of the total expense. The repairing and/or replacing of welders accounted for 6% or \$205.00 of the consumable supply expense. Two per cent, \$56.40, was spent on replacing hand tools. The cost of repairing and/or replacing power tools amounted to \$55.38 or 1% of the total. One per cent, \$54.35 was spent on replacing easily broken items such as twist drills.

The average amount spent for consumable supplies by all schools in the study was \$419.04. The total expense for consumable supplies seems to be less variable than is the cost per student since the cost per student is directly dependent upon the number of students receiving farm shop instruction. Five schools in the group show total expenses for consumable supplies that vary less than \$90.00 from the average expenditure of all the depart-

ments indicating that, regardless of the number of students receiving instruction or the amount of time spent in farm shop, there is not a great deal of variance in the amount of farm shop consumable supplies that must be purchased.

The unusually high expenditure for consumable supplies of school A can be partially explained by the fact that it showed a large amount of project construction materials on the beginning inventory and no doubt a large portion of this material was still on hand after the study was made as no effort was made to secure an ending inventory.

Lee W. Doyen⁹ stated in his thesis that six of twelve schools in South Central Kansas paid for all consumable supplies with an allowance of \$7.17 to \$8.25 per student.

It can be concluded from Table I that the cost per student of farm shop instruction is more variable than is the amount of expenditure for consumable supplies needed for farm shop instruction. School D in the study, with an enrollment of 42, purchased only \$57.31 more consumable supplies than did school G with an enrollment of 14.

⁹Lee W. Doyen, "Financial Procedures Needed in the High Schools of South Central Kansas", (Unpub. M. Thesis, Colorado A & M College, Fort Collins, 1952.),pp 96.

TABLE II

"CASE STUDIES"

COST OF CONSUMABLE SUPPLIES PER STUDENT HOUR OF FARM SHOP
INSTRUCTION IN EIGHT SELECTED OKLAHOMA
VOCATIONAL AGRICULTURE DEPARTMENTS

<u>School</u>	<u>Value of Consumable Supplies Used</u>	<u>Cost of Consumable Supplies Per Student</u>	<u>Student Hours Spent In Farm Shop</u>	<u>Consumable Supply Cost Per Student Hour Of Instruction</u>
A	\$845.24	\$52.83	4320	\$.20
B	453.65	11.94	6764	.07
C	143.54	4.95	5292	.03
D	380.15	9.05	8972	.04
E	469.80	22.37	3444	.14
F	451.17	9.21	7987	.06
G	322.84	23.06	2912	.11
H	286.00	9.86	7814	.04

Table II seeks to take the cost per student of consumable supplies from Table I, compare it with the number of student hours spent in farm shop instruction, and arrive at a cost per student hour of instruction.

In this table as in Table I, schools A, E, and G have the highest cost per student for farm shop instruction. The average cost per student hour for these three schools is \$.15 compared with an average cost per hour of \$.05 for the other five schools and an overall average cost per hour of slightly under \$.09. This reemphasizes the point that the cost of consumable supplies is somewhat the same for all the departments thus causing the cost per student hour of farm shop instruction to be considerably high-

er in the three small schools whose average enrollment is 17 students compared with the other five schools whose average enrollment is 37 students. The average number of student hours spent in farm shop instruction in schools A, E, and G is 3,559 hours compared with an average of 7,366 hours for the other five schools and an overall average of 5,888 hours. This, coupled with the higher cost per student for consumable supplies accounts for the higher cost per student hour of farm shop instruction in these small schools.

This does not mean that the smaller schools are less efficient, but rather means that the more students receiving farm shop instruction, the lower is the cost for providing this instruction.

The data presented in Tables I and II clearly point out the need for a good set of administrative policies and procedures for use in securing and maintaining supplies of consumable materials for farm shop instruction. The development and use of a set of administrative policies and procedures would also help promote better understanding between the vocational agriculture instructor and his superintendent. Any time the instructor requisitions equipment or supplies for his farm shop program, he should be able to justify the need and have records and information to present to the superintendent bearing out the need for this equipment or supplies. As discussed in Table III, many superintendents feel that the cost of the farm shop program in vocational agriculture is the greatest limiting factor to the nature and extent of the program when actually, as presented in Table IV, the cost of providing instruction in farm shop does not limit the nature and extent of the program. This is but one example of the misunderstanding that can occur when a superintendent of schools is not thoroughly acquainted with the workings of his vocational agriculture department. It is also a misunderstanding that a good set of records and administrative policies

coupled with a conference between the vocational agriculture instructor and the superintendent could usually prevent.

TABLE III
ADMINISTRATORS' OPINIONS OF FACTORS LIMITING
THE NATURE AND EXTENT OF THE FARM SHOP
PROGRAM ON THE LOCAL LEVEL

Limiting Factors in Order of Importance	R A T I N G O F I M P O R T A N C E	
	Points Earned On Ranking Scale	Per Cent of Total Points Earned
Costs of Providing Instruction	3620	41
Needs of Students	2780	31
Time Available in Comparison to Other Subjects	<u>2530</u>	<u>28</u>
TOTAL	8930	100

Table III shows the opinions of superintendents as to what factors limit the nature and extent of the farm mechanics program in vocational agriculture on the local level. Twenty-three or 49% of those superintendents replying stated that the cost of providing instruction was the most limiting factor to the farm mechanics program in their schools.

The superintendents were asked to rank three factors which limited the nature and extent of the farm mechanics program according to their relative importance in their community. The factors were then evaluated by a point system to determine their order of importance on a state-wide basis. The points were assigned according to a formula whereby a factor

that was ranked first would receive 100 points each time it was ranked first; a factor received 60 points each time it was ranked second; and 30 points were awarded each time a factor was ranked third.

The factor, "Cost of Providing Instruction" was ranked first 23 times; second 17 times; and third 7 times, thus earning 3,620 points on the ranking scale.

The factor, "Needs of the Students" was ranked first 14 times; second 13 times; and third 18 times, whereby it was awarded 2,780 points with the ranking formula.

The factor, "Time Available in Comparison to Other Subjects" was rated first 10 times; second 15 times; and third 21 times, thus earning 2,530 points.

Two superintendents voluntarily listed "Initiative of the Instructor", and "Lack of Proper Amount of Room" as the only factors limiting the nature and extent of the farm mechanics program in their school.

The factor, "Cost of Providing Instruction" was rated as the factor which most seriously limits the nature and extent of the farm mechanics program on the local level.

TABLE IV

EFFECT OF SUPERINTENDENTS' OPINIONS THAT COST OF FARM
SHOP PROGRAM IS LIMITING FACTOR ON AMOUNT
OF TIME SPENT TEACHING SELECTED SKILLS

<u>Shop Unit</u>	<u>Average Hours Taught in Schools Saying Cost is Limiting Factor</u>	<u>Average Hours Taught in Schools Listing Some Other Limiting Factor</u>	<u>Average Hours Taught in 28 Schools</u>
------------------	---	---	---

TABLE IV cont.

<u>Shop Unit</u>	<u>Average Hours Taught in Schools Saying Cost is Limiting Factor</u>	<u>Average Hours Taught in Schools Listing Some Other Limiting Factor</u>	<u>Average Hours Taught in 28 Schools</u>
Welding Practices and Skills	78	69.6	72.3
Cutting and Threading Bolts	6	3	4.2
Cutting and Threading Pipe	4	3	3.4
Project Construction and Farm Machinery Repair	<u>100</u>	<u>94</u>	<u>96.6</u>
TOTAL	188	169.6	176.5

Since the cost of providing instruction was listed by superintendents as the most limiting factor to the nature and extent of the farm mechanics on the local level in Table III, a comparison was made in Table IV between what the superintendent considered to be the limiting factor in his school and what the vocational agriculture instructor reported being taught in the farm shop of that same school. The purpose of this comparison was to see if the farm mechanics program of schools whose superintendent listed cost as the limiting factor was any less extensive than that of schools whose superintendent listed some other factor as a limit to the program.

The area of welding skills and practices includes both arc and oxygen-acetylene welding and cutting, brazing, hard surfacing, and oxygen-propane cutting. Project construction includes both small and large metal projects and small and large farm carpentry projects.

In the twelve vocational agriculture departments whose superintendents listed cost as the most limiting factor to the nature and extent of the

farm mechanics program, an average of 78 hours was spent teaching welding practices and skills as compared to 69.6 hours in departments whose superintendent listed some other factor and an average of 72.3 hours for the 28 schools.

An average of 6 hours was spent teaching cutting and threading bolts in the twelve schools listing cost as the limiting factor compared with an average of three hours in schools listing some other factor and an average of 4.2 hours by both groups.

Cutting and threading pipe was taught an average of four hours in schools listing cost as the limiting factor in comparison with three hours in schools listing some other factor and an average of 3.4 hours for both groups.

The areas of project construction and farm machinery were taught an average of 100 hours in schools where the superintendent listed cost as the limiting factor to farm shop compared with 94 hours in schools listing some other factor and an average of 96.6 hours in the 28 schools.

The total average hours spent in farm shop instruction was 188 hours in schools whose superintendents listed cost as the most limiting factor to the nature and extent of the farm shop program. Schools listing some other factor as limiting the nature and extent of the farm mechanics program taught a total average of 169.6 hours of farm shop skills. The average of the 28 schools from whom useable replies were received was 176.5 hours of farm shop training.

Although twelve superintendents felt their farm shop programs were limited by the cost of providing such instruction, the students were actually receiving more farm shop instruction in each area listed than students of schools whose superintendent did not feel that cost was the major limit-

TABLE V

RELATIONSHIP OF THE SIZE OF THE FARM SHOPS TO THE NATURE AND EXTENT OF THE FARM SHOP PROGRAM

Shop Unit	Square Feet Indicated																	
	400 to 700 (14%)*		701 to 1000 (17%)*		1001 to 1300 (24%)*		1301 to 1600 (5%)*		1601 to 1900 (12%)*		1901 to 2200 (2%)*		2201 to 2500 (7%)*		2501 to 2800 (5%)*		2800+ (14%)*	
	Hrs.-Av.		Hrs.-Av.		Hrs.-Av.		Hrs.-Av.		Hrs.-Av.		Hrs.-Av.		Hrs.-Av.		Hrs.-Av.		Hrs.-Av.	
Welding Skills and Practices	380	54	947	135	495	50	74	37	422	84	28	28	173	58	148	74	285	48
Cutting-Threading Bolts	17	2	8	1	55	5	5	3	15	3	4	4	13	4	4	2	---	--
Cutting-Threading Pipe	14	2	15	2	41	4	5	3	15	3	4	4	11	4	4	2	---	--
Metal Project Construction	74	11	796	114	465	47	70	35	277	55	160	160	157	53	233	116	471	79
Farm Carpentry Project Construction	103	15	130	19	226	23	6	3	33	6	---	--	54	18	22	11	162	32
Farm Machinery Repair	50	7	122	17	76	8	6	3	65	13	18	8	9	3	35	18	80	13
TOTAL	638		2018		1358		166		827		214		417		446		998	
AVERAGE TOTAL	106		288		136		83		165		214		139		223		166	

*Per cent of schools with this size shop.

ing factor to the farm shop program. In truth, the cost of the farm mechanics program does not limit the nature or extent of the training the students are receiving.

It would appear that the superintendents who think that the cost of providing instruction in farm mechanics is preventing their vocational agriculture students from receiving a maximum of training are very much misinformed and need to familiarize themselves with what is occurring in their farm mechanics programs. The vocational agriculture instructors in these schools seem to be budget conscious and are providing the students with a maximum of farm mechanics training with the money available for the farm shop program.

After concluding that the cost of providing instruction was not a limiting factor to the nature and extent of the farm mechanics program, an effort was made in Table V to determine if the size of the farm shop or the number of years of teaching experience in farm shop limited the extent of the farm mechanics program.

A total of 42 vocational agriculture instructors replied in this area indicating both the size of the farm shop facilities and the number of hours the various units of farm shop were taught in their departments. Six departments, 14%, reported shops ranging from 400 to 700 square feet. The farm shop facilities in seven departments, 17%, ranged from 701 to 100 square feet; and ten departments, 24%, had farm shops with from 1001 to 1300 square feet. A range of 1301 to 1600 square feet was reported by two departments, 5% of the total. Five departments, 12% of those replying, had farm shops from 1601 to 1900 square feet in size and one department, 2%, had a shop in the 1901 to 2200 square foot range. Three farm shops, 7%, had 2201 to 2500 square feet; and two departments, 5%, had farm shops

with 2501 to 2800 square feet. Six schools, 14% of the total, listed farm shops having over 2800 square feet with the largest having 4000 square feet.

No relationship is indicated between the size of the shop and what is being taught. The group of shops ranging in size from 701 to 1000 square feet are actually teaching more average total hours of farm shop than are the departments having shops in the over 2800 square foot range. It would seem logical to assume that as the size of the farm shop facilities increased, there would be a tendency toward more instruction in the project construction and farm machinery repair areas since these are generally thought to be units of instruction that require relatively large work areas. Schmidt¹⁰ reports that the Department of Vocational Education in the state of Nebraska recommends that the school farm mechanics shop should be a minimum of 1400 square feet. Warren¹¹ states that many projects that are constructed or repaired may consume as much as one-hundred square feet or more, not considering working area around them. However, schools in the 700 to 1000 square feet, 1901 to 2200 square feet, and 2501 to 2800 square feet ranges were teaching more project construction and farm machinery repair than those shops in the over 2800 square feet class. The average hours of project construction and farm machinery repair taught in these three groups of smaller shops is 154 hours compared with an average of 124 hours in the shops with over 2800 square feet.

It should be noted also that the schools with shops having over 2800 square feet are not teaching cutting and threading bolts or cutting and

¹⁰G. A. Schmidt, "Teaching Farm Shop Work and Farm Mechanics". The Century Co., p.187-192

¹¹Orval Ray Warren, "Planning Farm Mechanics Laboratories for Oklahoma". (Unpub. Master's NT Report, Oklahoma State University, 1962.)

Table VI shows that the number of years of teaching experience does have an effect upon the nature and extent of the farm shop program on the local level. The units of instruction in metal project construction and farm machinery repair exhibit the most marked differences. The combined total of 148 hours of instruction in this unit by the 2 to 5 and 6 to 10 year experience groups of teachers makes up 62% of the total time this unit is taught in schools in the study. The 2 to 5 year experience group is teaching 77 hours of farm machinery repair compared to the combined total of 45 hours for the other three experience groups. Based upon these differences, it would appear that teachers graduated from college within the past ten years received more college training in these areas of instruction than did earlier graduates. The unit of farm carpentry project construction also shows that teachers in the 11 to 14 year experience group are teaching more than two times as many hours of this unit than any other group in the study. The areas of welding skills and practices, bolt and pipe cutting and threading show no significant differences in the number of hours being taught by the various experience groups.

The total amount of time spent in farm shop instruction is not significantly affected by the number of years of teacher experience. The average number of hours spent in instruction is 171 hours for all groups of teachers in the study. However, the nature and extent of the farm shop program is affected by the number of years of teaching experience in farm shop in that teachers graduated in the past ten years are teaching more hours of the units of farm shop instruction demanded by a mechanized agriculture, the units of farm machinery repair and metal project construction.

The range of teaching experience of teachers in the study was from two to 27 years with the average experience being seven years plus.

TABLE VII

AMOUNT OF FARM SHOP FINANCING PROVIDED BY FFA EARNINGS COMPARED
WITH THE DEGREE OF FARM SHOP FINANCING ADMINISTRATORS
FAVOR BEING PROVIDED BY FFA EARNINGS

Degree of Financing Favored by Adminis- trators	PERCENT FINANCING PROVIDED BY FFA EARNINGS									
	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	TOTAL
0 - 10	12	--	3	1	2	--	--	3	1	22
11 - 20	3	--	--	--	1	--	--	--	--	4
21 - 30	4	--	2	--	--	--	--	2	--	8
31 - 40	--	--	1	--	--	--	--	--	--	1
41 - 50	--	--	--	--	--	--	--	--	1	1
51 - 60	--	--	--	--	--	--	--	--	--	--
61 - 70	--	--	--	--	--	--	--	--	--	--
71 - 80	--	--	--	--	--	--	--	--	--	--
81 - 90	--	--	--	--	--	--	--	--	--	--
TOTAL	19	--	6	1	3	--	--	5	2	36

Table VII shows the relationship between the policies of the vocational agriculture department and the opinion of the superintendent of schools regarding the use of independent earnings of the FFA chapter to partially finance the farm shop program.

A useable survey was received from both the superintendent and vocational agriculture teacher in 36 schools. These were categorized according to the per cent financing the superintendent felt should be provided by the earnings of the FFA and compared to the extent to which FFA funds were being used to finance farm shop instruction in the vocational agriculture department in his school.

Twenty-two superintendents or 61% of those replying indicated a preference that from 0 - 10% FFA earnings should be used in farm shop financing. In these same 22 schools, 12 departments provided 0 - 10% of farm shop financing with FFA earnings. Three departments were using 21 - 30% of the FFA earnings; two departments were paying 41 - 50% of the cost with FFA earnings; three departments were paying 71 - 80% of the farm shop costs; and one department was paying 81 - 90% of the cost of the farm shop program with FFA earnings.

Four superintendents, 11% of those replying, felt that from 11 - 20% of the cost of the farm shop program should come from FFA earnings. In these same four schools, three vocational agriculture instructors indicated that FFA earnings were supplying 0 - 10% of the cost and one department was paying 41 - 50% of the costs of the farm shop program from FFA earnings.

Twenty-two per cent of the superintendents, 8, expressed the opinion that FFA earnings should provide 21 to 30% of the cost of the farm shop instruction. In these eight schools, 4 FFA chapters were paying 9 - 10% of the cost; two departments were using 21 - 30% FFA earnings for financing;

and two departments were supplying 71 - 80% of the farm shop costs from FFA earnings.

One superintendent, 3%, felt that 31 - 40% of the farm shop costs should be borne by the FFA earnings. The FFA chapter in his school was providing 21 - 30% of the costs of the farm shop program.

One superintendent, 3%, preferred that FFA earnings provide 41 - 50% of the cost of a farm shop program while 81 - 90% of the cost of the farm shop instruction was being paid by the FFA chapter.

The data presented in this table indicate that there needs to be a meeting of minds on the subject of using FFA earnings for farm shop financing. In 14 or 39% of the schools replying, the earnings of the FFA chapter were being used to a greater extent than the superintendent favored. In eight schools, 22%, FFA earnings were being used to a lesser extent than the superintendent favored. In fourteen schools, 39%, independent earnings of the FFA were being used to finance farm shop instruction at the rate favored by the superintendent. This seems to be another area of misunderstanding between the superintendent and the vocational agriculture instructor which would justify the time spent in a conference to establish an equitable ratio of shared expenses if and when such a practice is deemed necessary.

It might well be, that those chapters spending the higher proportions of FFA earnings for farm shop are also those that do an extensive amount of cooperative chapter project construction and it is necessary to use FFA earnings to purchase supplies for this type of project construction. The money received from such projects is usually used to purchase additional supplies or items of equipment that the school may not be able to buy for the farm shop.

TABLE VIII

AMOUNT OF FARM SHOP FEES STUDENTS PAY IN COMPARISON TO THE
DEGREE OF FARM SHOP FINANCING SUPERINTENDENTS
FAVOR BEING PROVIDED BY STUDENT FEES

Degree Financing Favored by Superin- tendent PER CENT	F A R M S H O P F E E S C H A R G E D							TOTAL
	0	1.00	1.50	2.00	3.00	4.00	5.00	
0	9	1	1	-	1	-	1	13
10	-	-	1	-	-	1	-	2
20	-	-	-	2	-	-	1	3
30	6	1	1	-	1	-	-	9
40	-	-	-	-	-	-	-	0
50	-	-	-	-	-	1	-	1
60	-	1	-	-	-	-	-	1
70	-	-	-	-	-	-	-	0
80	-	1	-	-	-	-	-	1
90	-	-	-	-	-	-	-	0
100	<u>1</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>3</u>
TOTAL	16	5	3	2	3	2	2	33

Table VIII shows the relationship between the amount of fees charged vocational agriculture students for farm shop and the degree to which superintendents feel students' fees should support the farm shop program.

The same procedure was used to secure data as was used to secure data in Table VII. Thirty three useable schedules were received and the responses from the superintendent and the vocational agriculture instructor were

compared for each school.

Thirteen administrators, 39% of those replying, favored the use of no student fees for financing farm shop instruction. In nine of these schools, the vocational agriculture instructor reported no student shop fees were being charged. One school reported a \$1.00 shop fee; one school a fee of \$3.00; and the last school reported a \$5.00 student shop fee being charged.

Two superintendents, 7%, favored financing 10% of the cost of a farm shop program with student fees. In these schools, one vocational agriculture instructor indicated a shop fee of \$1.50 per year and the other department reported a shop fee of \$4.00 per year.

Twenty per cent of the cost of a farm shop program should be provided by student shop fees was the opinion of three, 8%, superintendents. Two of the vocational agriculture departments of these schools indicated a shop fee of \$2.00 while the other indicated a shop fee of \$5.00.

Nine superintendents, 27%, favored student shop fees be used to finance 30% of the farm shop program. Of these nine schools, six of the vocational agriculture departments in the survey charged no student fees; one department charged a \$1.00 fee; one department charged a \$1.50 fee; and one department charged \$3.00 as a student shop fee.

One superintendent, 3%, favored 50% financing from student fees and the boys in the vocational agriculture farm shop at his school were paying a \$4.00 shop fee.

A sixty per cent rate of financing from student fees was favored by one superintendent, 3%, and vocational agriculture students in farm shop paid a \$1.00 fee.

A student shop fee of \$1.00 was charged to students in a school whose superintendent favored 80% of farm shop financing coming from student fees.

Three administrators, 9%, felt that fees paid by their vocational agriculture students should finance 100% of the farm shop instruction. In these three departments, one vocational agriculture teacher charged no fees; one department charged a \$1.00 fee; and one group of students had a \$3.00 farm shop fee.

T. J. Wakeman¹² in an article in Better Farming Methods Magazine says that he feels the school should furnish everything the student needs except the material used in projects that the student will carry home. Practice material required for school projects should be supplied by the school.

It would be very difficult to set up a ratio of how much student fees would have to be charged to provide a specified amount of the cost of the farm shop program. The amount of fee to charge would depend upon the number of students and the nature and extent of the farm mechanics program.

Table IX is a comparison between what superintendents favor regarding persons using the farm shop facilities and the use of farm shop facilities by groups as reported by vocational agriculture instructors.

The information was obtained by comparing the superintendents preference for groups allowed to use the farm shop facilities and the actual use of the farm shop facilities by groups as reported by the vocational agriculture instructors in each of 34 schools. The purpose of the comparison was to determine how closely the policies of the agriculture department compared with the opinion of the superintendent regarding persons allowed to use the facilities.

Two superintendents or six per cent of those replying, indicated they

¹²T. J. Wakeman, "Farm Mechanics for School and On the Farm", Better Farming Methods, March, 1957, pp 64-65.

TABLE IX

ADMINISTRATORS' PREFERENCES OF GROUPS ALLOWED
TO USE FARM SHOP FACILITIES COMPARED WITH
USE BY GROUPS REPORTED BY VOCATIONAL
AGRICULTURE INSTRUCTORS

Use by Groups Favored by Administrators	USE OF SHOP			TOTAL
	High School Students Only	High School Students and Young or Adult Farmer Class Members	Anyone in School District	
High School Students Only	--	2	--	2
High School Students and Young or Adult Farmer Class Members	5	20	3	28
Anyone in School District	<u>1</u>	<u>1</u>	<u>2</u>	<u>4</u>
TOTAL	6	23	5	34

favored allowing only high school students to use the farm shop. Both of the vocational agriculture instructors reported their shops being used by high school students and regularly enrolled adult or young farmer class members.

Use of the farm shop facilities by regularly enrolled adult or young farmer class members and high school students was favored by 28 or 82% of the superintendents. Twenty vocational agriculture instructors reported their shops used by both high school students and regularly enrolled adult or young farmer class members. Five departments reported their farm shop facilities used by high school students only, and three departments reported the use of the farm shop by anyone in the school district.

Four superintendents, 12%, favored the use of farm shop facilities by anyone in the school district. In these same four schools, one vocational agriculture instructor reported his farm shop used by high school students only; one department reported the facilities used only by high school students and regularly enrolled adult or young farmer class members; and two departments were allowing anyone in the school district to use the farm shop facilities.

Twenty-two vocational agriculture departments, 64% of those replying, reported their farm shop facilities being used by the same groups favored by their superintendents. This would indicate that in the majority of cases, the feelings of the superintendent of schools are respected and complied with by his teacher of vocational agriculture. Some vocational agriculture instructors do not have an organized adult or young farmer class in farm mechanics which could account for use of the farm shop facilities by high school students only when the superintendent favored the use of the facilities by both high school students and young or adult farmer class members.

The use of the farm shop facilities by anyone in the school district can, at times, be a good public relations tool for the vocational agriculture department, but most generally it creates additional problems in administration of fee policies, times available for use, and the extent to which the facilities may be used by this group. The problem of competing with local businesses may also be encountered.

It can be concluded that there is a good working relationship between the superintendent and the vocational agriculture teacher regarding the policies of who shall be allowed to use the farm shop facilities.

Of the 44 schools replying in Table X on fees charged all-day vocational agriculture students, a total of 21 or 48% indicated they did not

TABLE X
 VOCATIONAL AGRICULTURE DEPARTMENTS' FEE POLICIES
 REGARDING PERSONS USING FARM SHOPS

Amount of Fee	All-Day Students		Regularly Enrolled Adult or Young Farmers		Other Persons Using Farm Shop	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
No Fees Charged	21	48	6	15	4	10
\$1.00	4	9	--	--	--	--
1.50	1	2	--	--	--	--
2.00	3	7	1	2	--	--
2.50	2	5	--	--	--	--
3.00	4	9	1	2	--	--
4.00	1	2	--	--	--	--
5.00	3	7	12	29	2	5
6.00	--	--	--	--	--	--
7.00	--	--	--	--	--	--
8.00	--	--	1	2	--	--
9.00	--	--	--	--	--	--
10.00	--	--	3	8	--	--
1.00/session	--	--	3	8	--	--
.50/hour	--	--	--	--	1	2
Actual Cost of Supplies	--	--	10	24	17	40
Not Indicated	<u>5</u>	<u>11</u>	<u>4</u>	<u>10</u>	<u>18</u>	<u>43</u>
TOTAL	44	100	41	100	42	100

charge a vocational agriculture shop fee. Four schools, 9%, indicated a shop fee of \$1.00 per student. One department, 2%, charged a shop fee of \$1.50. A \$2.00 shop fee was charged by three schools, 7% of those replying. Two schools, 5%, charged \$2.50 per student for shop fees. Four schools, 5%, charged \$2.50 per student for shop fees. Four schools, 9% of those replying, reported a shop fee of \$3.00. Four dollars was the shop fee assessed by one school, 2% of the total, and three departments, 7%, reported a yearly shop fee of \$5.00 per student. Five schools, 11%, did not indicate their fee policy for all-day vocational agriculture students.

Forty-one departments expressed a preference for a shop fee for young or adult farmer class members. Six departments, 15%, indicated they did not favor a farm shop fee for this group. One department, 2% of those replying, favored a shop fee of \$1.00 and a fee of \$3.00 was favored by another department. Twelve departments representing 29% of those replying favored a \$5.00 farm shop fee for young and adult farmers. Eight dollars was the shop fee preference for one department for this group. Three departments or 8% were in favor of charging \$10.00 for adult or young farmers using the shop. Three departments, 8%, were in favor of charging this group \$1.00 per class meeting as a shop fee. Ten departments, 24%, favored charging these class members the actual cost of supplies used in the shop. Four of the schools or 10% did not indicate their fee policy preference regarding this group.

Forty-two departments reported on their preference for a fee policy for persons other than the two aforementioned groups using their farm shop facilities. The persons included in this group as reported by some of the departments are school custodians, school bus mechanics, parents of the students, and in some instances, anyone in the school district. Four of

these departments, 10% of the replies, reported they favored no shop fee for this group while two departments, 5%, favored a \$5.00 shop fee be charged this group. One department or 2% favored a charge of \$.50 per hour for each hour this group worked in the farm shop. Seventeen schools, 40% of those replying, indicated that this group should be charged the actual cost for the material and supplies used. Eighteen departments, 43%, did not indicate their preference for a fee policy concerning other persons using the farm shop.

Eighteen vocational agriculture departments, 41% of those replying, favored charging all-day vocational agriculture students a shop fee while 21 schools or 48% reported they did not charge a student shop fee.

Thirty-one of the departments reported an adult or young farmer class in farm mechanics. This group representing 75% of those replying, charged some type of farm shop fee for these classes.

Forty-seven per cent of the schools reporting other persons using the farm shop facilities, a total of 20 schools, reported charging this group a farm shop fee of some type.

TABLE XI

NUMBER OF SCHOOLS HAVING ESTABLISHED VOCATIONAL AGRICULTURE BUDGETS WITHIN THE TOTAL SCHOOL BUDGET

	SCHOOLS REPORTING	
	Number	Per Cent
Have a Budget	4	9
Do Not Have a Budget	<u>41</u>	<u>91</u>
TOTAL	45	100

Table XI shows the number of schools having an established vocational agriculture department budget within the total school budget.

Four vocational agriculture departments or 9% of those reporting had a vocational agriculture department budget set up within the total school budget. One school reported \$50.00 of the vocational agriculture budget was set aside to handle farm shop expenses. Sixty dollars of the vocational agriculture budget was allocated to farm shop in another school. A third school reported a \$200.00 farm shop budget provided for by the vocational agriculture budget. The last school had \$625.00 provided by the total vocational agriculture budget to take care of the operation of the farm shop. It was also indicated by this school that the farm shop portion of the budget was flexible enough to take care of unusual repairs, parts, or equipment as needed. This department did not charge a student shop fee.

Forty-one or 91% of the departments replying indicated they did not have an established vocational agriculture budget within the total school budget.

The findings of this table indicate that vocational agriculture instructors need to counsel with the superintendent concerning a budget for vocational agriculture. It would seem that very little has been done toward procuring a budget for the vocational agriculture department. The use of a budget would undoubtedly improve the efficiency of all vocational agriculture instruction provided enough planning went into the formulation of such a budget and it was sufficient to meet the needs of the local department. It would be the responsibility of the vocational agriculture instructor to see that the superintendent was informed concerning the budget needs of his department and to have a part in formulating the budget.

In Table XII 43 vocational agriculture instructors were asked if they

TABLE XII

PREFERENCE OF VOCATIONAL AGRICULTURE INSTRUCTORS REGARDING A
SEPARATE FARM SHOP BUDGET AS OPPOSED TO A TOTAL
VOCATIONAL AGRICULTURE BUDGET

Departments Replying	T Y P E B U D G E T		F A V O R E D	
	Separate Farm Shop Budget		Total Vocational Agriculture Budget	
	Number	Per Cent	Number	Per Cent
43	12	28	31	72

would prefer a separate farm shop budget within the vocational agriculture budget or if they would prefer a total vocational agriculture budget with all funds in one account.

Twelve teachers or 28% indicated they would like to have a separate farm shop budget within the vocational agriculture budget.

Seventy-two per cent of the teachers, 31 of those replying, indicated a preference for a total vocational agriculture budget with all vocational agriculture funds in one account to handle all financial operations of the department.

As indicated in Table XI, only four schools had a vocational agriculture budget within the total school budget yet 87% of the teachers participating in the study felt that funds for their department should be included within the total school budget.

A conference between the vocational agriculture teacher and the superintendent of schools regarding a farm shop budget would be well worthwhile it would seem. If nothing were accomplished except to acquaint the superintendent with the nature and extent of the vocational agriculture program,

it would serve to promote better understanding and could have a very desirable effect on the amount of financing provided for the vocational agriculture department. If the superintendent can be made to understand the need for the funds for vocational agriculture and can see the benefits to be derived from such funds, he will most likely be happy to help provide them.

TABLE XIII

COMPARISON OF THE PROPORTION OF COST OF CONSUMABLE SUPPLIES CHARGED STUDENTS USING THEM WITH THE AMOUNT OF FARM SHOP FEES PAID

Per Cent of Cost Charged	F E E S P A I D B Y S T U D E N T S							TOTAL
	0	1.00	1.50	2.00	3.00	4.00	5.00	
0	14	1	-	-	-	-	1	16
10	3	1	-	1	-	-	1	6
20	-	-	-	-	-	-	-	0
30	-	-	-	-	1	-	1	2
40	-	-	-	-	-	-	-	0
50	1	-	2	-	-	1	-	4
60	-	-	-	-	-	-	-	0
70	-	-	-	-	-	-	-	0
80	3	-	-	-	1	1	-	5
90	2	-	-	-	1	-	-	3
100	<u>3</u>	<u>3</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>8</u>
TOTAL	26	5	2	3	3	2	3	44

Table XIII shows the relationship between the amount of farm shop fees paid by vocational agriculture students and the proportion of the cost of

consumable supplies paid by the students who use them.

Sixteen schools, a total of 36%, reported that students were not charged for the consumable supplies used by them in their farm shop instruction. Of these 16 schools, fourteen were not charging a student shop fee; one school was charging a \$1.00 shop fee; one school was charging a \$5.00 student shop fee. Of the schools making no charge for consumable supplies, 88% of them were charging no student shop fee indicating that payment for consumable supplies was being provided by another source.

Six schools, 14%, reported charging students 10% of the cost of consumable supplies used. Three of these schools were charging no fee; one school a \$1.00 shop fee; one school charged a \$2.00 shop fee; and one school charged a \$5.00 shop fee. Of the schools charging 10% of the cost of consumable supplies to the students who used them, 50% were requiring the students to pay a shop fee.

Students were charged 30% of the cost of consumable supplies used in two schools, 5%, with students paying a \$3.00 farm shop fee in one school and a \$5.00 shop fee in the other school.

Students in four schools, 9% of those replying were required to pay 50% of the cost of consumable supplies used. One school in this group charged no shop fee while two of the schools charged a \$1.50 shop fee. A four dollar shop fee was paid by vocational agriculture students in the other school.

Five schools, 11%, reported they were charging students at the rate of 80% of the cost of consumable supplies and material used. Three of these schools were not charging a student shop fee while one school charged a \$3.00 shop fee and the other charged \$4.00 for a farm shop fee.

Ninety per cent of the cost of consumable supplies was charged stu-

dents in three schools, 7% of those reporting. Two schools of this group charged no student shop fees while the third school charged a \$3.00 shop fee.

Students in eight schools, 18%, were required to pay 100% of the cost of consumable supplies used in farm shop. Of this total, three schools charged no student shop fees; three schools charged a \$1.00 shop fee; and two schools charged students a \$2.00 farm shop fee in vocational agriculture.

As tabulated from the case studies of eight schools in Table I, the average cost per student of consumable supplies used in farm shop was \$17.91. Therefore, a student shop fee of \$5.00 and no charge for consumable supplies used would be inadequate as a means of financing the cost of consumable supplies. It would seem unfair, however, to charge each student a fee of \$17.91 per year for farm shop, so other means of financing must be sought. Several schools reported other methods of financing the costs of consumable supplies such as FFA workdays, custom slaughtering of livestock, concession stands at school activities, FFA chapter funds, and selling cooperatively built FFA farm shop projects. The latter is the most commonly used method and will provide students with a great deal of educational experiences as well as help finance the cost of consumable supplies used in the farm shop program.

Thirty-one schools in Table XIV, 70% of those reporting, charged students 100% of the cost of materials and supplies not used for educational purposes. These materials and supplies were used primarily on students' individual projects that were made in the vocational agriculture shop and taken home. Eight schools, 18%, charged 90% of the costs of these materials and supplies and one school, 2%, charged 75% of the cost of these non-educational materials and supplies.

TABLE XIV
 COMPARISON OF THE PER CENT OF ENTIRE COST OF MATERIALS AND
 SUPPLIES FOR NON-INSTRUCTIONAL USES CHARGED STUDENTS
 WITH THE AMOUNT OF FARM SHOP FEES PAID

Per Cent of Cost	S T U D E N T F E E S P A I D							TOTAL No. Students
	0	1.00	1.50	2.00	3.00	4.00	5.00	
0	1	-	-	-	-	-	-	1
15	-	1	-	-	-	-	-	1
30	-	-	-	-	1	-	1	2
45	-	-	-	-	-	-	-	0
60	-	-	-	-	-	-	-	0
75	-	-	-	-	-	1	-	1
90	4	-	1	1	1	1	-	8
100	<u>21</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>-</u>	<u>2</u>	<u>31</u>
TOTAL	26	5	2	3	3	2	3	44

Only four schools, 8% of the replies, were charging less than 30% of the cost of materials to the students who used them. One school in this group was making no charge to students using materials and was charging no student shop fees. This is a highly unusual situation unless, of course, all supplies and materials were donated or supplied by the student from home. It would be very difficult for a vocational agriculture department not to charge for materials and supplies used on students' individual projects even if a business had donated the materials and supplies for the department would still have handling and storage costs against the mate-

rials. Also, it would not be providing the student with the proper kind of learning experiences regarding money management and so forth.

Several superintendents of schools voluntarily indicated that they were willing to pay the entire cost of all consumable supplies and materials used for instructional purposes, but pointed out that the students should pay for all materials and supplies used on a project constructed for personal use.

As pointed out in the discussion following Table VIII, Mr. T. J. Wakeman believes the school should furnish everything the student needs except the materials used in projects that the student will carry home. Practice material required for school projects should be supplied by the school.

TABLE XV

FARM SHOP FINANCIAL RECORDS KEPT BY
VOCATIONAL AGRICULTURE INSTRUCTORS

Records Kept	Departments Replying	S C H O O L S R E P O R T I N G			
		Y E S		N O	
		Number	Per Cent	Number	Per Cent
Adequate Records of All Transactions	43	30	70	13	30
Record of Sales and Purchases	45	32	71	13	29
Bills of Sale or Sales Receipts	44	30	68	14	32
Receipts Issued for Money Collected	43	29	67	14	33
Up-to-date Farm Shop Inventory	44	19	43	25	57

Table XV indicates that the vocational agriculture teachers participating in this study felt that they were keeping an adequate set of farm shop financial records. Thirty teachers, 70% of those replying indicated that they kept an adequate over-all set of farm shop records, sufficient for their own purposes. Thirteen teachers or 30% felt that they did not keep an adequate set of records dealing with farm shop transactions.

Thirty-two or 71% of the teachers indicated that they kept complete records of all purchases and sales of farm shop supplies and equipment. Thirteen or 29% of those replying did not keep records of sales and purchases.

Sixty-eight per cent, 30 of the teachers replying, stated they kept bills of sale or sales slips from purchases of consumable supplies and materials for farm shop use. Thirty-two per cent of the teachers indicated they did not keep bills of sale or sales slips for consumable supplies and materials purchased.

Receipts were issued and a duplicate copy kept for the department files by 29 vocational agriculture instructors representing 67% of those replying. Fourteen teachers, 33%, did not issue receipt for money collected.

Nineteen teachers, or 43%, replied that they kept an up-to-date inventory of farm shop consumable supplies and materials. Fifty-seven per cent, 25 teachers, did not keep an up-to-date inventory of these items. Twenty-three, 92%, of those teachers not now keeping an up-to-date inventory record indicated that they should keep such an inventory record. The other two teachers, 8%, not keeping an inventory record, indicated they felt it was not necessary to keep such a record. One teacher now keeping an inventory record stated that he did not feel that the keeping of such a record

was necessary.

With an average cost per student of \$17.91 for consumable supplies in farm shop instruction as indicated by the data presented in Table I, it would seem essential to keep a good, complete set of farm shop records including an accurate, up-to-date inventory of farm shop consumable supplies.

TABLE XVI
NUMBER OF SCHOOLS USING ESTABLISHED COST LISTS
FOR FARM SHOP CONSUMABLE SUPPLIES

	<u>SCHOOLS REPORTING</u>	
	Number	Per Cent
Have Established Cost List	15	36
Do Not Have Established Cost List	<u>27</u>	<u>64</u>
TOTAL	42	100

Table XVI shows the extent to which an established cost list for consumable supplies was used by the vocational agriculture departments participating in this study.

Of the 42 departments reporting, 15 or 36% indicated they did have an established cost list for consumable supplies. Twenty-seven departments, 64%, did not have an established cost list for use in charging for consumable supplies.

In Table XIII, 28 departments indicated they charged for consumable supplies at a rate varying from 10% to 100% of their cost. Of these 28 departments charging for consumable supplies only 11 or 39% had an established cost list for these supplies. The other 17 or 61% were charging

for the consumable supplies without the use of an established list for these consumable supplies and materials.

TABLE XVII
TIME PAYMENT SHOULD BE MADE FOR FARM
SHOP CONSUMABLE SUPPLIES USED

Time	SCHOOLS REPORTING	
	Number	Per Cent
As Material is Used	32	70
Every 6 Weeks	1	2
Upon Completion of Project	<u>13</u>	<u>28</u>
TOTAL	46	100

Data presented in Table XVII indicates that thirty-two teachers, 70% of those replying, favor students paying for consumable farm shop materials and supplies as they are used. Thirteen teachers or 28% expressed the preference that consumable supplies be paid for when the project they are used on is completed. One teacher, 2%, preferred payment at the end of each six weeks period of school.

The collection of money for consumable supplies used as soon as they are used would eliminate the keeping of additional records necessitated by the use of some other method of payment. The punch-fee card would seem particularly suited to the practice of paying for consumable supplies as they are used. With the punch-fee card method of collection, the student would purchase a card for a specified amount of money at the start of school.

The card would be marked with different value combinations and as the student purchased consumable supplies, the instructor would punch the correct value combinations on the card much as the student activity cards are handled in many schools. At the end of the school year, if the student had not used all of his punch-fee card the money would be refunded on the unused portion. If a student used all of one card, he could purchase another. Since most schools have a full-time school secretary, this would be the natural place for students to purchase punch-fee cards and all records could be kept in the central school office.

TABLE XVIII

RECEIVERS OF PAYMENTS FOR FARM SHOP
CONSUMABLE SUPPLIES AND MATERIALS

To Whom Paid	SCHOOLS REPORTING	
	Number	Per Cent
Vocational Agriculture Instructor	22	48
FFA Treasurer	12	26
Superintendents' or School Secretary	2	4
No Reply	<u>10</u>	<u>22</u>
TOTAL	46	100

Table XVIII shows that the vocational agriculture instructor is the person to whom payment for consumable supplies and materials used in farm shop is most commonly made. In 22 departments, 48% of those replying, money due for supplies or materials was paid to the vocational agriculture

instructor. In twelve schools, 26% of the total payment was made to the school secretary who is usually the superintendents' secretary. No preference as to whom to make payment was indicated by 10 schools, 22% of those replying.

The adoption of the punch-fee card system of paying for consumable supplies as discussed in Table XVII, could fit very well into this situation. The vocational agriculture instructor would "collect" for the supplies used by punching the card, but the purchase of the card would be taken care of in the school office by the school secretary. The use of the punch-fee card would be much easier than the handling of cash and making change. Even with this system, the vocational agriculture instructor would still collect for supplies used, but the collecting process would be much easier.

Table XIX shows that vocational agriculture instructors in two schools, or 5% of those replying, said they bought 10% of their consumable supplies in advance of the time they were needed. Thirty per cent of the consumable supplies needed were purchased beforehand by five schools representing 12% of those schools reporting. Nine schools or 22% bought 50% of their consumable supplies ahead of the time when they were needed. Nine schools, 22%, bought 80% of the needed consumable supplies in advance. A total of seven schools or 17% of those replying, bought 100% of the consumable supplies necessary for their farm mechanics program in advance of need.

Thirty-four schools representing 83% of all those replying, purchased from 50% to 100% of their needed consumable supplies in advance of the time they would be needed.

Several of the schools in Table XX reported that there were no local sources for many of the items of consumable supplies, thus requiring out-

TABLE XIX
 PROPORTION OF FARM SHOP CONSUMABLE SUPPLIES
 PURCHASED IN ADVANCE OF NEED

Per Cent Purchased	SCHOOLS REPORTING	
	Number	Per Cent
10	2	5
20	0	0
30	5	12
40	0	0
50	9	22
60	0	0
70	0	0
80	9	22
90	9	22
100	<u>7</u>	<u>17</u>
TOTAL	41	100

of-town trips to secure these supplies. It would be much more important to purchase items to be secured out-of-town in advance of need than some of the items available locally although, it is a good practice to purchase as many items as possible in advance of need. In an article in the Agricultural Education Magazine on the "Efficient Use of the Teachers' Time", Mr. Knuti¹⁴ makes the recommendation that the teacher should, "Buy consumable supplies in large enough amounts to avoid frequent buying trips."

¹⁴Leo L. Knuti, "Efficient Use of Teachers' Time", The Agricultural Education Magazine, 28:206, 210, March, 1956.

TABLE XX
ITEMS OF FARM SHOP CONSUMABLE SUPPLIES
PURCHASED IN ADVANCE OF NEED

Item	<u>DEPARTMENTS REPORTING</u>	
	Number	
Welding Electrodes	42	
Oxygen Gas and/or Acetylene Gas	27	
Oxygen Gas and/or Propane Gas	2	
Bolt Stock	9	
Nails	7	
Paint	3	
Scrap Iron for Welding Instruction	20	
Pipe	14	
Lumber	7	
Electrical Supplies	3	
Sucker Rods	5	
Barrels	1	
Hand Tools and Other Supplies	11	

CHAPTER IV

SUMMARY AND CONCLUSIONS

The primary purpose of this study was to determine the administrative procedures and practices used in financing the cost of consumable supplies and materials for farm shop instruction. The second purpose was to compute an average cost per student hour of instruction in farm shop for consumable supplies. The third purpose was to establish the type of relationship that exists between the administrative preferences of superintendents of schools and the actual administrative procedures being practiced by vocational agriculture teachers. The final purpose was to obtain information relating to the operation and maintenance of a farm mechanics program in vocational agriculture.

In order to achieve the purposes stated above, two different methods of research were employed. To obtain the costs per student hour of instruction in farm shop, ten vocational instructors were asked to compile an inventory of consumable supplies and materials at the beginning of the past school year. Useable schedules were received from eight departments. In addition these teachers kept an up-to-date record of consumable materials and supplies purchased during the school year 1961-1962. These case studies were then compiled and tabulated by the author. The second method of research used was the questionnaire. Questionnaires were prepared and sent to the vocational agriculture instructor and superintendent of each of 70 schools. The superintendents were asked to indicate their preferences

regarding the financing of a farm shop program, groups allowed to use the farm shop facilities, and the factors limiting the farm shop program on the local level. The results of these superintendents' opinionnaires were compared with the policies of the vocational agriculture department as indicated on the vocational agriculture instructors questionnaires.

Table I and II are presented at the beginning of this study for the purposes of illustrating the costs of consumable supplies and materials used in farm shop instruction and, thus, the need for administrative policies and procedures regarding farm shop instruction. These tables accomplish one of the purposes of this study. That is, they show the costs of consumable supplies per student hour of farm shop instruction for a typical vocational agriculture department in a single year. As pointed out earlier, these are case studies and the data were compiled by eight instructors of vocational agriculture. As computed from the case studies, the average cost per student hour of farm shop instruction for consumable supplies was \$.086 with the range of costs being from \$.20 per hour to \$.03 per hour. It was found that the cost per student of farm shop consumable supplies was more dependent upon the number of students in farm shop rather than the nature or extent of the farm shop program. This is caused by the somewhat low variation in the amount of consumable supplies purchased by the departments in this study. The costs per student hour of instruction for consumable supplies is dependent upon both the number of students and the number of hours spent in farm shop instruction. With an average cost per student of \$17.91 for consumable supplies, the need for a set of administrative policies is clearly set forth.

Since the nature and extent of the farm shop program would have an effect on the administrative policies and procedures employed, an effort

was made to determine if selected factors limited the nature and extent of the farm shop programs and thus altered the administrative policies.

The costs of providing farm shop instruction were considered as a factor that limited the amount of instruction received by students in the opinions of several superintendents. Contrary to the opinions expressed by these administrators, the costs of the farm shop program does not limit the amount of instruction offered in farm shop. The farm shop curriculum of twelve schools whose superintendent said that cost was the limiting factor to instruction was compared to the farm shop curriculum of sixteen schools whose superintendent listed some other factor as the limit to the nature and extent of the farm shop program. It was found that in the twelve vocational agriculture departments whose superintendents said the costs of a farm shop program were a limiting factor to instruction were actually teaching more farm shop hours than schools whose superintendents did not feel cost was a limit to the program. These twelve schools were spending more time in farm shop than the average of both groups. It would seem that the teachers in these twelve schools understand the feelings of their superintendents and are providing a maximum of farm shop instruction with the money available. The costs of providing farm shop instruction seems to enhance and increase the scope of the farm shop program rather than serve as a limiting factor.

A comparison of the size of farm shop facilities and the extent of the teaching programs in vocational agriculture departments' farm shops showed that there was no relationship between the size of the farm shop facilities and the type of farm shop instructional program. In fact, some of the smallest farm shops are offering the most extensive farm shop instructional programs in all units of instruction. It would seem logical to assume that

the vocational agriculture departments with the larger farm shop facilities would, at least, be offering more instruction in the project construction and farm machinery repair areas. This, however, did not prove to be the case, as many of the vocational agriculture departments with relatively small farm shop facilities are offering more instruction in these units. There is no relationship between the size of the farm shop facilities and the nature and extent of the farm shop instructional program.

The number of years of farm shop teaching experience seems to have a significant effect upon the nature and extent of the farm shop instructional program. The six to ten year experience group taught the highest number of average hours of farm shop instruction. The other three experience groups were in close alignment regarding the total number of hours of farm shop instruction. The shop areas of instruction showing a marked difference in the number of hours taught were the units of metal project construction and farm machinery repair. The two to five and six to ten year experience groups were teaching 62% of all the metal project construction being taught. The two to five year experience group taught nearly two times as much farm machinery repair as did the other three experience groups combined. This indicates that college graduates of the past five years have received more training in farm machinery repair. College graduates of the past ten years have received more training in metal project construction than did teachers graduated over eleven years ago. It would seem that the teachers graduated from college within the past ten years are gearing their farm shop programs more toward the present day, mechanized agriculture.

The cost of providing instruction and the size of the farm shop facilities do not affect the nature and extent of the program while the years of

farm shop teaching experience does affect the nature and extent of the farm mechanics program on the local level. It would seem rather, that the personal preference of the instructor or some other factor would be a greater limitation as indicated by Hobbs' study quoted earlier.

The preference of the superintendent of schools regarding the use of independent earnings of the FFA chapter for defraying the cost of the farm shop program and the actual use of FFA earnings as reported by vocational agriculture instructors, shows a significant variation. Sixty-one per cent of the vocational agriculture departments reporting were using a different per cent of FFA earnings for farm shop financing than was favored by the superintendents of these schools. Thirty-nine per cent of the departments reported they were using a greater percentage of FFA funds for farm shop financing than was favored by their superintendents, while 22% were using a lesser extent of FFA earnings to finance farm shop instruction than that favored by their superintendents. An equitable compromise needs to be settled upon between the superintendent and vocational agriculture instructor regarding the use of FFA earnings in financing farm shop instruction. Those chapters using a greater amount of FFA funds than that favored by the superintendents, should inform the superintendent of the practice since it seems the school would pay a higher per cent of the cost than it is presently paying. The use of independent earnings of the FFA for financing any part of the farm shop program is not usually the most desirable situation, but in some schools, the use of these earnings will allow the vocational agriculture department to purchase materials and supplies or even items of equipment it would not normally be able to get. If the use of independent earnings of the FFA will assure a good working relationship between the superintendent of schools and the vocational agriculture instructor and

provide the students with more learning activities in farm shop, they should be used for this purpose.

Apparently, there is not enough exchange of information concerning either the feeling of the superintendent about farm shop financing from students' fees or the type of farm shop program in operation and the costs of providing such a program. The superintendent and the vocational agriculture instructor should share their opinions and information and bring each other up-to-date concerning the administration of a farm shop program in each school. The superintendent should be informed about the nature and extent of the farm shop program in the vocational agriculture department and of the personal feelings of the agriculture instructor regarding administering the program. If the superintendent feels, as several administrators do, that each department should support itself as nearly as possible, he should be able to justify this to the vocational agriculture teacher and a working agreement concerning the administration of a farm shop program should be worked out.

The administrative preference of superintendents and the administrative policies of vocational agriculture teachers concerning persons allowed to use the farm shop facilities are in close harmony. The preferences of the superintendent of schools regarding persons allowed to use the farm shop was the policy being practiced in 64% of the vocational agriculture departments in the comparison. It appears that there has been some discussion about this matter between the administrator and the vocational agriculture instructor and that their administrative policies are in close agreement. It is this type of relationship that should exist between the administrative policies of the superintendent and vocational agriculture instructor for the use of FFA earnings for farm shop financing and the charging of

students' shop fees.

Of the vocational agriculture instructors indicating a fee policy preference for all-day students, the majority favored not charging a student farm shop fee. Only 10% of the teachers replying were in favor of not charging a shop fee for regularly enrolled adult or young farmer class members while 10% of these teachers did not indicate a fee policy preference. It is important that some type of fee policy be established after discussion with the superintendent and/or board of education and this policy be strictly adhered to in order to avoid confusion and misunderstanding among persons allowed to use the farm shop facilities.

A very small number of vocational agriculture departments have an established vocational agriculture budget within the total school budget. Only four departments in this study reported having an established budget for vocational agriculture. Eighty-seven per cent of the teachers participating in the study indicated, however, that they felt funds for their departments should be included within the total school budget. Seventy-two per cent of the teachers indicated a preference for a total vocational agriculture budget as compared with a separate farm shop budget within the vocational agriculture budget. Since the preference for a budget is indicated by a majority of the teachers, it would seem that here again is an opportunity for the vocational agriculture instructor and the superintendent to work closely on their common problem of providing maximum instruction with a minimum of money.

There is no relationship between the proportion of the cost of consumable supplies charged to the students who use them and the amount of student shop fees paid. The per cent of cost of consumable supplies charged to students who use them does not influence the amount of students shop

fee charged. The schools charging the higher rates for consumable supplies are actually charging less in proportion for farm shop fees than are schools charging for consumable supplies at a lower rate. It would seem that the schools which charged a low cost for consumable supplies and charged little or no student shop fees, would have to seek another source of income in order to maintain their stocks of consumable supplies. This practice of not charging for consumable supplies nor charging student shop fees may be partially explained by the voluntary answers of several superintendents that they favored providing for all instructional consumable supplies from the school budget and required students to pay for all supplies used on a take-home project. As indicated in the discussion following Table XIII, other schools used various fund raising activities to maintain stocks of consumable supplies which might partially explain the practice of not charging for consumable supplies nor charging student farm shop fees.

Students should be required to pay for the consumable materials and supplies used in constructing a take-home project. It would seem highly impractical or nearly impossible for a vocational agriculture department to charge no student shop fees nor charge students for the consumable materials and supplies used for a take-home project, unless of course, the construction of these projects was prohibited. The practice of charging for materials and supplies is good farm shop business management and has a great deal of merit as a learning experience for students. As mentioned earlier, most superintendents desire to have each department pay its own way as nearly as possible and in order for the farm shop program in vocational agriculture to pay its own way, the students must pay for materials used on take-home projects.

A complete set of farm shop administrative records were kept by over

67% of all vocational agriculture instructors participating in the study except in the area of an up-to-date farm shop inventory. The study shows that nearly all of those teachers not keeping an inventory felt that they should be. This would indicate that vocational agriculture instructors are aware of the value of a good set of records and are, for the most part, keeping such records sufficient for their own purposes.

An established cost list for consumable supplies was not used in the majority of those departments making a charge for consumable supplies. It would appear that it would be very difficult to assess a charge for consumable supplies without the use of an established cost list for these supplies. Such a cost list would need to be revised as changing prices necessitated but should be established and used in order to be fair and equitable for both the students and the school. Again, this is simply a matter of good farm shop business management.

The study indicates that students should pay for consumable supplies and materials as they are used. The adoption of this policy would eliminate the need for keeping additional records which would be required were some other payment policy used. In schools adopting this policy, it would seem well worthwhile for them to consider the use of the "punch-fee" card system as discussed under Table XVII.

Money due for consumable supplies is paid to the vocational agriculture instructor. This finding of the study would further indicate that the "punch-fee" card system would be particularly suited to use in vocational agriculture farm shops. On a particular day in shop when all students are working on individual projects, it would be difficult for the instructor to take time away from supervision of these boys to issue receipts for money, make change, and perform the other necessary tasks

on a cash payment policy. With the "punch-fee" card, the instructor would merely punch out the proper value combinations and payment would be made.

The results of the study show that from 50% to 100% of the consumable supplies used in farm shop instruction are purchased in advance of the time they are needed. Over 80% of the teachers reporting purchased this degree of consumable materials and supplies in advance. This is a practice that should be more widely adopted, since all too frequently, teachers have to take time away from other activities to purchase supplies that were not purchased in advance. Quite often, there is no local source for the supplies and it is necessary to make an out-of-town trip for them.

The adoption and adherence to a set of administrative policies and procedures for providing instruction in farm shop is a problem with which all vocational agriculture departments having these facilities must cope. The most important factor governing the selection and adoption of these policies and procedures is the local situation. That is, the policies and procedures should be formulated by the vocational agriculture instructor with the assistance of the school administrator and other school officials for the purpose of meeting local needs.

Conclusions. The following conclusions were arrived at as a result of an analysis of data gathered in the study:

1. The nature and extent of the instructional program in farm shop is not significantly limited by the costs of providing instruction, number of years of teacher experience in farm shop instruction, or the size of the farm shop facilities.
2. The per cent of the cost of consumable supplies charged to students who use them does not influence the amount of farm shop fees charged.
3. Students should pay for the consumable supplies and materials used in construction take-home projects.

are not in agreement upon the subjects of using FFA earnings for financing farm shop instruction, charging student fees, and providing vocational agriculture budgets within the total school budget.

Recommendations. Based upon the findings of this study, the writer feels the following recommendations can be made:

1. The vocational agriculture instructor and the superintendent should discuss their separate, personal feelings regarding the administrative policies and procedures and together arrive at the practices and policies to be used in their school's farm shop program.
2. Administrative policies and procedures should be fair and equitable to all groups allowed to use the farm shop.
3. Residents of the school district should be informed about the administrative policies and practices decided upon for the vocational agriculture farm shop facilities.
4. The use of the "punch-fee" card is recommended for handling payment for consumable supplies by students in farm shop.
5. Vocational agriculture instructors should keep accurate, up-to-date farm shop records adequate for their own purposes.
6. Teachers should purchase consumable supplies in advance of need whenever possible and in amounts large enough to avoid frequent buying trips.

A SELECTED BIBLIOGRAPHY

1. Cook, G. C., L. L. Scranton, and H. F. McColley; Farm Mechanics Text and Handbook; Danville, Illinois; the Interstate Printing Company, 1956.
2. Doyen, Lee W.; "The Present and Recommended Methods of Financing Instruction in Farm Mechanics Programs in the South Central District of Kansas"; (Unpub. M. Ed. Report, Colorado Agricultural and Mechanical College, Fort Collins, 1953.)
3. Hobbs, Walter Wesley; "Factors Associated With the Occurrence of Effective Local Farm Mechanics Programs in Vocational Agriculture in Oklahoma"; (Unpub. D. Ed. Dissertation, Oklahoma State University, Stillwater, 1960.)
4. Hopper, James Edsel; "The Methods and Administrative Procedures Used in Financing the Costs of Consumable Supplies and Equipment in Farm Mechanics Instruction in Vocational Agriculture Departments in South Carolina"; (Unpub. M. S. Thesis, Clemson College, Clemson, South Carolina, 1957.)
5. Knuti, Leo L.; "Efficient Use of Teachers' Time"; Agricultural Education Magazine, 28:206, 210, March, 1956.
6. Satterlee, Lowell D.; "Kansas Administrators Participation in Policy Making of the Vocational Agriculture Program"; The Agricultural Education Magazine, December, 1960.
7. Schmidt, G. A.; "Teaching Farm Shop Work and Farm Mechanics". The Century Company.
8. Wakeman, T. J. "Farm Mechanics for School and On the Farm"; Better Farming Methods Magazine, March, 1957.
9. Warren, Orval Ray; "Planning Farm Mechanics Laboratories for Oklahoma"; (Unpub. M. S. Report, Oklahoma State University, 1962.)
10. Zollinger, Clinton David; "Criteria for Evaluating Procedures and Techniques Used in Handling Supplies in Farm Mechanics Departments in Utah High Schools"; (Unpub. M. Ed. Thesis, Utah State Agricultural College, Logan, Utah, 1955.)

November 1, 1961
Perry, Oklahoma

Dear Superintendent of Schools:

Your school is recognized as being one that has an effective farm mechanics program in vocational agriculture. For this reason it was selected as a school from which to secure information for my graduate study problem in Agricultural Education at Oklahoma State University, dealing with the expenses incurred in the operation of a farm mechanics program.

Your vocational agriculture instructor is being asked to cooperate in the study by filling out a survey questionnaire concerning his administrative practices and procedures and the methods of financing the costs of consumable supplies used in instruction in the farm mechanics program.

I would also like to ask your cooperation in the study by completing a survey form regarding the feelings of school administrators toward the farm mechanics program in vocational agriculture. Enclosed you will find a short questionnaire which I would like for you to complete and return to me, by December 1, in the enclosed stamped, self-addressed envelope. The information you supply will be kept in strict confidence and will not be identified in any manner in the completed study.

I realize that this is always a busy time in the school year, but any assistance you can offer will be greatly appreciated.

THANK YOU!!

Sincerely yours,

Robert Terry, VO-AG Instructor
Perry and Sumner Schools

Enclosure

SUPERINTENDENT QUESTIONNAIRE

DATE _____

1. What proportion of the expenses incurred in the operation and maintenance of the farm mechanics program in vocational agriculture do you feel should be borne by:

- A. The local school budget? _____%
- B. The independent earnings of the FFA chapter? _____%
- C. Fees paid by students in vocational agriculture? _____%
- D. Others (please list)?
- _____ %
- _____ %
- _____ %

2. Do you feel that farm mechanics facilities of the vocational agriculture department should be made available to:

- | | (check one) YES NO | |
|--|--------------------------|--------------------------|
| A. High school students only? | <input type="checkbox"/> | <input type="checkbox"/> |
| B. High school students and farmers and young farmers regularly participating in planned educational programs? | <input type="checkbox"/> | <input type="checkbox"/> |
| C. Any resident of the school district? | <input type="checkbox"/> | <input type="checkbox"/> |

3. Which of the following do you consider as limiting factors as to the nature and extent of the farm mechanics program in the local vocational agriculture department?

(please rate according to importance in your community)

- A. Needs of the students? _____
- B. Cost of providing instruction? _____
- C. Time available in comparison to other subjects? _____

November 1, 1961
Perry, Oklahoma

Fellow Vocational Agriculture Instructor:

I am working toward a Master of Science Degree in Agricultural Education at Oklahoma State University and am conducting a survey in connection with my graduate study problem. The study will deal with the administrative practices and procedures and methods of financing the costs of consumable supplies used in farm mechanics instruction in vocational agriculture.

Your farm mechanics program is recognized by the members of the Agricultural Education Staff at Oklahoma State University and the State Supervisors of Vocational Agriculture as being one of the best in operation in the state. For this reason I would like to enlist your aid in the study by completing the enclosed questionnaire form and returning it to me, by December 1, in the enclosed stamped, self-addressed envelope.

Your superintendent of schools is also being asked to cooperate by completing a short survey form on the feelings of school administrators toward a farm mechanics program in vocational agriculture.

The information you supply will be kept in strict confidence and will not be identified in any manner in the completed study. Any assistance you can give will be greatly appreciated.

THANK YOU!!

Sincerely yours,

Robert Terry, VO-AG Instructor
Perry and Sumner Schools

Enclosure

QUESTIONNAIRE

DATE _____

1. Name of School _____ 2. Instructor _____
3. How many years have you taught farm shop? _____
4. Indicate below the items of equipment you have in your farm shop:

ITEM	NUMBER	SIZE	TYPE
Arc Welder			
Oxygen-Acetylene Welder			
Oxygen-Propane Cutting			
Acetylene Generator			
Portable Electric Drill			
Electric Drill Press			
Electric Grinder			
Electric Table Top Saw			
Electric Radial Arm Saw			
Tap and Die Set (Screw Plate)			
Pipe Threader			
Power Hacksaw			
Other Electric Tools (Please List)			

5. How many square feet does your farm shop contain? _____
6. How many persons in each of the following groups use your farm shop during the year?

GROUP	NUMBER OF PERSONS
Vocational Agriculture I	
Vocational Agriculture II	
Vocational Agriculture III	
Vocational Agriculture IV	
Regularly enrolled adult or young farmer class members	
Others (please specify)	

7. Approximately how many hours and to what groups do you teach the following areas of farm shop?

SHOP AREA	NUMBER OF HOURS TAUGHT TO:				
	VO-AG I	VO-AG II	VO-AG III	VO-AG IV	ADULT
Arc Welding					
Oxy-Acetylene Welding					
Oxy-Acetylene Cutting					
Oxy-Propane Cutting					
Brazing					
Cutting-Threading Bolts					
Cutting-Threading Pipe					
Hard Surfacing					
Small Metal Project Construction					
Large Metal Project Construction					
Small Farm Carpentry Projects					
Large Farm Carpentry Projects					
Farm Machinery Repair					

8. Do you have an established vocational agriculture budget for your department in the total school budget? _____ How much of this vocational agriculture budget is allocated to finance farm mechanics instruction? \$ _____

9. Do you charge a student shop fee? _____ How much? \$ _____

10. What proportion of the entire cost of consumable supplies is charged to the students who use them? (Circle one)

- A. 10% B. 25% C. 50% D. 75% E. 90% F. 100%

11. Do you have an established cost list for consumable supplies? _____

12. To whom do students make payment for supplies and materials used? (check one)

To you? _____ To FFA Treasurer? _____ To other person? (list) _____

13. What proportion of the entire cost of materials is charged to the students who use them? (circle one)

- A. 10% B. 25% C. 50% D. 75% E. 90% F. 100%

14. To what extent do you use proceeds from FFA activities to finance farm shop activities? (circle one)

- A. 10% B. 25% C. 50% D. 75% E. 90% F. 100%

15. Should money be collected for supplies and materials as soon as they are used? _____

16. Indicate below your feelings toward a shop fee policy regarding persons who use your farm shop.

GROUP	YES	NO	\$ AMOUNT
A. Regularly enrolled all-day students			
B. Regularly enrolled adult or young farmers			
C. Other persons using farm shop			

17. Do you teach an organized adult or young farmer class in farm mechanics during the school year? _____ What is your fee policy for such a class? (please indicate policy and amount of fee)

18. Do you feel that the student and the school should share in the expense of farm shop consumable supplies and materials? _____ At what rate do you feel these costs should be shared? (circle one)

A. 10% B. 25% C. 50% D. 75% E. 90% F. 100%

19. Do you think funds for your department should be included in the total school budget? _____

20. Do you feel that you need a separate farm shop budget? _____ Or would you be in favor of placing all vocational agriculture department funds in one account to handle all purchases and sales? _____

21. Do you have a method of financing not covered by one of the foregoing questions? _____ Please describe this method.

22. Do you feel that you keep adequate records of funds used in the vocational agriculture department farm shop? _____

23. Do you keep complete records of all purchases and sales of farm shop supplies and equipment? _____

24. Do you keep bills of sales or sales slips for all farm shop consumable supplies and materials purchased? _____

25. Do you issue receipts for money received and keep a duplicate copy for your files? _____

26. Do you keep an up to date inventory record of farm shop consumable supplies and materials? _____

27. Do you feel that you should keep a shop inventory record? _____ How often should this inventory be made? (circle one)

A. Monthly B. Semi-annually C. Annually D. Bi-annually

28. Are your vocational agriculture department funds audited? _____ How often? _____

29. What proportion of farm shop consumable supplies and materials are purchased in advance of need? (circle one)

A. 10% B. 25% C. 50% D. 75% E. 90% F. 100%

What particular items are generally purchased in advance of need? List below.

A. _____ B. _____

C. _____ D. _____

30. Indicate below the sources of the consumable supplies and materials used in your farm shop program.

	LOCALLY	OUT-OF-TOWN	WHICH IS THE CHEAPEST SOURCE (check one)	
			LOCAL	OUT-OF-TOWN
Arc Welding Electrodes				
Oxy-Acetylene Rods				
Oxygen Gas				
Acetylene Gas				
Carbide				
Propane Gas				
Power Tool Repairs				
Hand Tool Repairs				
Breakable Items (Bits, etc.)				
Angle Iron				
Sucker Rods				
Pipe (construction)				
Pipe (plumbing)				
Bolt Stock				
Strap Metal				
Sheet Metal				
Lumber				
Barrels				
Other Materials (specify)				

THANK YOU FOR YOUR COOPERATION!!!

September 8, 1961
Perry, Oklahoma

Vocational Agriculture Instructor

Dear

I am working on a graduate study problem concerning the costs of maintaining a farm shop program in vocational agriculture. Part of the study will involve case studies of 10 departments in our Professional Improvement Group. I would like to ask your assistance, first in completing the enclosed farm shop materials and supplies inventory form; and then by completing a record of supplies and materials purchased during this current school year.

I believe the forms are self-explanatory and I am enclosing two stamped, self-addressed envelopes in which to return the completed forms. I would like to have the inventory form by November 15, and the other form in April or May.

If you feel that you haven't the time to complete these forms please don't hesitate to say so because I realize this is a busy time of the year and I don't want to interfere. If you are unable to complete these forms please return them to me.

I might suggest that a Junior or Senior student could easily complete these forms under your supervision and this might make it easier for you. I will try to visit with all the teachers who are assisting with the study at some time during the year.

I will certainly appreciate any help that you can give me and hope that you will find an opportunity in the near future for me to return the favor.

THANKS!!!

Sincerely yours,

Bob Terry, VO-AG Instructor
Perry and Sumner

Enclosure

THE FOLLOWING MATERIALS AND SUPPLIES
WERE ON HAND AS OF SEPTEMBER 1, 1961
FOR INSTRUCTION IN THE FARM SHOP OF

THE _____
VOCATIONAL AGRICULTURE DEPARTMENT

ARC WELDING ELECTRODES

KIND	TYPE (AC-DC)	AMOUNT (pounds)	SIZE	VALUE
Mild Steel				
Cast Iron				
Hard Facing				
Others (Please List)				

OXYGEN-ACETYLENE WELDING RODS

KIND	SIZE	AMOUNT (pounds)	VALUE
Mild Steel			
Bronze			
Hard Facing			
Others (Please list)			

GASES FOR OXYGEN-ACETYLENE OR OXYGEN-PROPANE
WELDING AND CUTTING

KIND	SIZE CYLINDER (Cu. Ft., Gallons, or #)	VALUE
Oxygen		
Acetylene		
Propane		
Carbide		

METAL AND MATERIAL SUPPLY FOR
CONSTRUCTION AND/OR INSTRUCTION

TYPE OF MATERIAL	SIZE	NUMBER OF FEET	VALUE
Angle Iron			
Sucker Rods			
Pipe (construction)			
Pipe (plumbing)			
Bolt Stock			
Strap Metal			
Sheet Metal			
Barrels			
Lumber			
Other Materials (please list)			

METALS AND MATERIALS PURCHASED FOR CONSTRUCTION
AND/OR INSTRUCTIONAL PURPOSES IN FARM SHOP WORK

TYPE MATERIAL	SIZE	NUMBER OF FEET	SOURCE	COST
Angle Iron				
Sucker Rods				
Pipe (construction)				
Pipe (plumbing)				
Bolt Stock				
Strap Metal				
Sheet Metal				
Barrels				
Other Materials				

WELDERS REPLACED OR REPAIRED

TYPE (AC, DC, Oxy-Acetylene)	SIZE (amps)	SOURCE	COST

POWER TOOLS REPLACED OR REPAIRED

KIND OF TOOL	SOURCE	COST

VITA

HOWARD ROBERT TERRY

Candidate for the Degree of

MASTER OF SCIENCE

Thesis: ADMINISTRATIVE PRACTICES AND COSTS OF PROVIDING CONSUMABLE SUPPLIES AND MATERIALS FOR FARM SHOP INSTRUCTION IN OKLAHOMA VOCATIONAL AGRICULTURE DEPARTMENTS

Major Field: Agricultural Education

Biographical:

Personal data: Born at Hobart, Oklahoma, June 15, 1937, the son of Howard L. and Daisy E. Terry.

Education: Attended grade school at Mountain View, Oklahoma; graduated from Mountain View High School in 1955; received the Bachelor of Science Degree from Oklahoma State University, with a major in Agricultural Education in January, 1959; entered graduate school in January, 1959.

Experiences: Taught Vocational Agriculture in both the Perry and Sumner public schools on a full one-half time basis for three years starting in July, 1959.

Organizations: Member of Phi Delta Kappa, Collegiate FFA, Oklahoma State University Alumni Association, Oklahoma Vocational Agriculture Teachers' Association, Oklahoma Vocational Association, Oklahoma Education Association, National Education Association, First Baptist Church, Perry, Oklahoma.